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USER GUIDE

UGB020-0313

TrueBlend Blender

with SB-2 control

Please record your equipment's model and serial number(s) and the date you received it in the spaces provided.

It's a good idea to record the model and serial number(s) of your equipment and the date you received it in the User Guide. Our service department uses this information, along with the manual number, to provide help for the specific equipment you installed.

Please keep this User Guide and all manuals, engineering prints and parts lists together for documentation of your equipment.

Date:

Manual Number: UGB020-0313

Serial Number(s):

Model Number(s):

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Table of Contents

1-1 Introduction

Purpose of the User Guide 1-2
How the Guide Is Organized 1-2
Your Responsibilities as a User 1-2
ATTENTION: Read this so no one gets hurt 1-3
Included Safety Features 1-4
How to Use the Lockout Device 1-5
Zero Mechanical State (ZMS) 1-6

2-1 Description

What is the TrueBlend SB-2 Blender? 2-2
Typical Applications 2-2
How it works: The TrueBlend 2-3
TrueBlend SB-2 System Components 2-5
Recipe Entry Modes 2-5
Resin and Product Names 2-5
Specifications: TrueBlend 2-6

3-1 Installation

Unpacking the Boxes 3-2
Preparing for Installation. 3-3
Preparing to Mount the Blender 3-4
Mounting the Blender 3-5
Mounting the Control 3-5
Layout of the Material Hoppers. 3-6
Mounting the Loaders. 3-6
Connecting Compressed Air 3-7
Installing the Weigh Bin 3-7
Connecting the Main Power 3-7
Testing the Installation 3-8
TrueBlend SB-2 Batch Hopper Calibration. 3-8

4-1 Operation

The TrueBlend SB-2 Operator Control Panel 4-2
Loading Material Into the TrueBlend SB-2 Hoppers 4-3

4-1 Operation (continued)

Starting the Blending Process 4-3
Stopping the Blending Process 4-3
Security Settings 4-3
Licensing 4-4
Menus 4-4
Quick Setup 4-4
Hardware 4-4
Battery 4-4
USB 4-4
User Interface 4-5
General Concepts 4-5
Navigation 4-8
Basic Navigation Buttons 4-9
Initial Page 4-10
Home 4-11
Languages 4-13
Reports 4-13
Alarm Log Report 4-15
Active Alarm Report 4-16
Current Status Report 4-16
Shift Inventory Report 4-16
Total Inventory Report 4-16
Recipe Report 4-16
Resin Report 4-16
Report Schedule 4-17
Logging Report 4-17
TrueBlend Report 4-18
Security 4-19
Security Screen 4-19
Alarms 4-21
Totals 4-23
Monitor 4-25
Recipe 4-25
Recipe Book 4-30
Loading Optional 4-31
Setup 4-32
System Setup 4-34

4-1 Operation (continued)

Recipe Setup 4-34
Relays Setup 4-36
Alarms Setup 4-37
Network Setup 4-40
System Configuration 4-43
Panel Setup 4-45
Panel 4-47
Units 4-48
Security 4-49
Date 4-51
Component Setup 4-53
Diagnostics 4-64
Simulation Mode 4-74
X20 Slices 4-74
Checking Emergency Stop Function 4-77
Changing Material in a Blender Component 4-78
Cleaning Mixing Chamber and Hopper 4-80

5-1 Maintenance

Preventative Maintenance Schedule 5-2
Preventative Maintenance Checklist 5-2
Loading Equipment 5-3
Software Upgrades 5-3
Checking Emergency Stop Function 5-4
Testing the Safety Interlock Switch 5-4
Cleaning Mixing Chamber and Hopper 5-4
Draining the Water Separator 5-5
Inspecting Hoses 5-5
Removing and Installing the Mixing Chamber 5-6
Calibrating/Adjusting the Sensor 5-7
Replacing Pneumatic Cylinder on Vertical Dispense Valve 5-9
Load Cell Removal and Installation 5-10
Weigh Bin Mount Installation and Adjustment 5-11
Load Cell Removal 5-13
Load Cell Installation 5-14

6-1 Troubleshooting (continued)

Before Beginning 6-2

A Few Words of Caution 6-2

DIAGNOSTICS

How to Identify the Cause of a Problem 6-3

Signaling Alarm Message 6-3

Handling Alarm Messages. 6-3

Alarms 6-4

REPAIR

Replacing Fuses 6-11

Replacing Controller Battery 6-12

Replacing Load Cells. 6-13

A Appendix

We're Here to Help A-1

How to Contact Customer Service A-1

Before You Call... . . . . A-1

Equipment Guarantee A-2

Performance Warranty. A-2

Warranty Limitations A-2

B Appendix

Retrofit Control Blender Start Up Procedures B-1

C Appendix

Blow Off Installation Instruction Sheet. C-1

D Appendix

Calibrating/Adjusting Level Sensor (pre Sept. 2007) D-1

E Appendix

Installing Automatic Flow Control Valve (Option) E-1

F Appendix

Installing Dry Air Blanket (Option) F-1

Introduction

Purpose of the User Guide 1-2
How the Guide Is Organized 1-2
Your Responsibilities as a User 1-2
ATTENTION: Read This So No One Gets Hurt 1-3
Included Safety Features 1-4
How to Use the Lockout Device 1-5
Zero Mechanical State (ZMS) 1-6

Purpose of the User Guide

This User Guide describes the Conair Trueblend SB-2 Blender and explains step-by-step how to install, operate, maintain, and repair this equipment.

Before installing this product, please take a few moments to read the User Guide and review the diagrams and safety information in the instruction packet. You also should review manuals covering associated equipment in your system. This review won't take long, and it could save you valuable installation and operating time later.

How the Guide is Organized

Symbols have been used to help organize the User Guide and call your attention to important information regarding safe installation and operation.

Symbols within triangles warn of conditions that could be hazardous to users or could damage equipment. Read and take precautions before proceeding.

1 Numbers indicate tasks or steps to be performed by the user.

◆ A diamond indicates the equipment's response to an action performed by the user.

❒ An open box marks items in a checklist.

• A circle marks items in a list.

Indicates a tip. A tip is used to provide you with a suggestion that will help you with the maintenance and the operation of this equipment.

Indicates a note. A note is used to provide additional information about the steps you are following throughout the manual.

Your Responsibilities as a User

You must be familiar with all safety procedures concerning installation, operation, and maintenance of this equipment. Responsible safety procedures include:

- Thorough review of this User Guide, paying particular attention to hazard warnings, appendices, and related diagrams.
- Thorough review of the equipment itself, with careful attention to voltage sources, intended use and warning labels.
- Thorough review of instruction manuals for associated equipment.
- Step-by-step adherence to instructions outlined in this User Guide.

ATTENTION:
Read This So No One Gets Hurt

We design equipment with the user's safety in mind. You can avoid the potential hazards identified on this machine by following the procedures outlined below and elsewhere in the User Guide.

⚠ WARNING: Improper installation, operation, or servicing may result in equipment damage or personal injury.

This equipment should be installed, adjusted, and serviced by qualified technical personnel who are familiar with the construction, operation, and potential hazards of this type of machine.

All wiring, disconnects, and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the machine serial tag and data plate.

⚠ WARNING: Voltage hazard

This equipment is powered by single-phase alternating current, as specified on the machine serial tag and data plate.

A properly sized conductive ground wire from the incoming power supply must be connected to the chassis ground terminal inside the electrical enclosure. Improper grounding can result in severe personal injury and erratic machine operation. (120 Volt units come with a grounded plug. Must be plugged into a grounded out.)

Always disconnect and lock out the incoming main power source before opening the electrical enclosure or performing non-standard operating procedures, such as routine maintenance. Only qualified personnel should perform troubleshooting procedures that require access to the electrical enclosure while power is on.

⚠ CAUTION: Mix blade hazard

There are two hazards associated with the mix blades. First, the blades are driven with substantial torque. Never place your hand in the mix chamber unless power is completely disconnected. Second, the mix blades may become razor sharp. Always be careful when touching or cleaning these blades. Check for sharp edges frequently. Replace blade if a hazard exists.

⚠ CAUTION: Vertical valve hazard

Vertical valves in hoppers slam closed without warning. They will injure your fingers. Always keep fingers clear of valve openings. Never use your fingers to clear an obstruction. Never use your fingers to move a sticking valve.

⚠ CAUTION: Slide gate hazard

Never use your fingers to move a sticking slide gate under the mix chamber.

⚠ CAUTION: Misuse hazard

This blender must be exclusively used for metering and mixing free-flowing (as per DIN ISO 3435) plastic granulate and additives. A total of four to six different materials can be metered and mixed in the blender, depending on model.

The following must not be metered and mixed:

- Foods of all types (unit does not meet hygienic standards).
- Highly abrasive materials, such as stones, sand (increased wear of unit components).
- Poorly free flowing, sticky materials (airtight seal by the pneumatic cylinder is adversely affected).
- Liquids and powders (airtight seal by the pneumatic cylinder is not possible).

Included Safety Features

⚠ Safety Interlock Switch

The access door is equipped with a safety interlock switch that prevents the mix motor from running and the slide valves from operating. Do NOT defeat this safety switch.

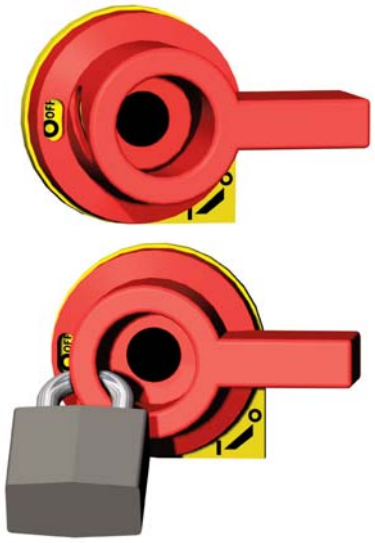
⚠ Hopper Finger Guards

Finger guards are fitted into each hopper compartment. Do NOT reach through these guards. Do NOT use your fingers to clear an obstruction below these guards. Do NOT remove these guards.

How to Use the Lockout Device

⚠ **CAUTION:** Before performing maintenance or repairs on this product, you should disconnect and lockout electrical power sources to prevent injury from unexpected energization or start-up. A lockable device has been provided to isolate this product from potentially hazardous electricity.

Lockout is the preferred method of isolating machines or equipment from energy sources. Your Conair product is equipped with the lockout device pictured below. To use the lockout device:



1 Stop or turn off the equipment.

2 Isolate the equipment from the electric power. Turn the rotary disconnect switch to the OFF, or "O" position.

3 Secure the device with an assigned lock or tag. Insert a lock or tag in the holes to prevent movement.

4 The equipment is now locked out.

⚠ **WARNING:** Before removing lockout devices and returning switches to the ON position, make sure that all personnel are clear of the machine, tools have been removed, and all safety guards reinstalled.

To restore power to the dryer, turn the rotary disconnect back to the ON position:

1 Remove the lock or tag.

2 Turn the rotary disconnect switch to the ON or "I" position.

✎ **Note**: Depending on model, your blender may have either of the disconnects shown.

Zero Mechanical State (ZMS)

⚠ **CAUTION:** Before performing maintenance or repairs on this product, you should disconnect and lockout electrical power sources to prevent injury from unexpected energization or start-up. A lockable device has been provided to isolate this product from potentially hazardous electricity.

During maintenance, it is essential that the system be put into a state which eliminates the possibility of components making an unexpected and dangerous movement. This procedure is typically referred to as lockout. After all energy sources have been neutralized, the system is in the zero mechanical state (ZMS). This provides maximum protection against unexpected mechanical movement.

The lockout procedure must include all energy sources:

- Electrical power supply
- Compressed air supply
- Hydraulic fluids under pressure
- Potential energy from suspended parts
- Energy in springs
- Any other source that might cause unexpected mechanical movement

The following is a recommended Zero Mechanical State procedure which must be followed prior to any inspection, adjustment or maintenance of the system.

1. **If there is a remote control device, press the <STOP> key at that remote operator's control.**

2. **Press the <STOP> key at the local TrueBlend SB-2 control panel.**

3. **Disconnect and lock out the primary electrical supply feeding the TrueBlend SB-2 controller.**

4. **Disconnect and lock out the primary electrical supply feeding the material handling system that is feeding the TrueBlend SB-2 material hoppers with process material.**

5. **Shut-off and lock out the primary compressed air supply that is feeding the material handling devices.** Vent the compressed air supply lines.

6. **On each TrueBlend SB2, disconnect all of the cables leading to the motor of the metering device. (Where applicable).**

7. **Drain any process material from the loading devices feeding the TrueBlend SB-2 material hoppers.**

8. **Lock out all energy sources which might cause unexpected movement of equipment which is accessible through the discharge at the base of the TrueBlend SB-2 extruder hopper.**

9. **Test to verify that all energy sources have actually been disconnected and/or de-energized.**

⚠ **WARNING:** Before removing lockout devices and returning switches to the ON position, make sure that all personnel are clear of the machine, tools have been removed, and all safety guards reinstalled.

SECTION
2

Description

What is the TrueBlend SB-2 Blender? 2-2
Typical Applications 2-2
How it works: TrueBlend. 2-3
TrueBlend SB-2 System Components. 2-5
Recipe Entry Modes. 2-5
Resin and Product Names. 2-5
Specifications: TrueBlend TB45-4. 2-6
Specifications: TrueBlend TB100-4. 2-7
Specifications: TrueBlend TB250-4&6 2-8
Specifications: TrueBlend TB250-R-4 2-9
Specifications: TrueBlend TB500-4&6 2-10
Specifications: TrueBlend TB900-4&6 2-11
Specifications: TrueBlend TB1800-4,5&6 2-12
Specifications: TrueBlend TB2500-4,5&6 2-13
Specifications: TrueBlend TB3500-4,5&6 2-14
Specifications: TrueBlend High Heat Models. 2-15
Specifications: Level Alarm Control 2-16

What is the TrueBlend SB-2 Blender?

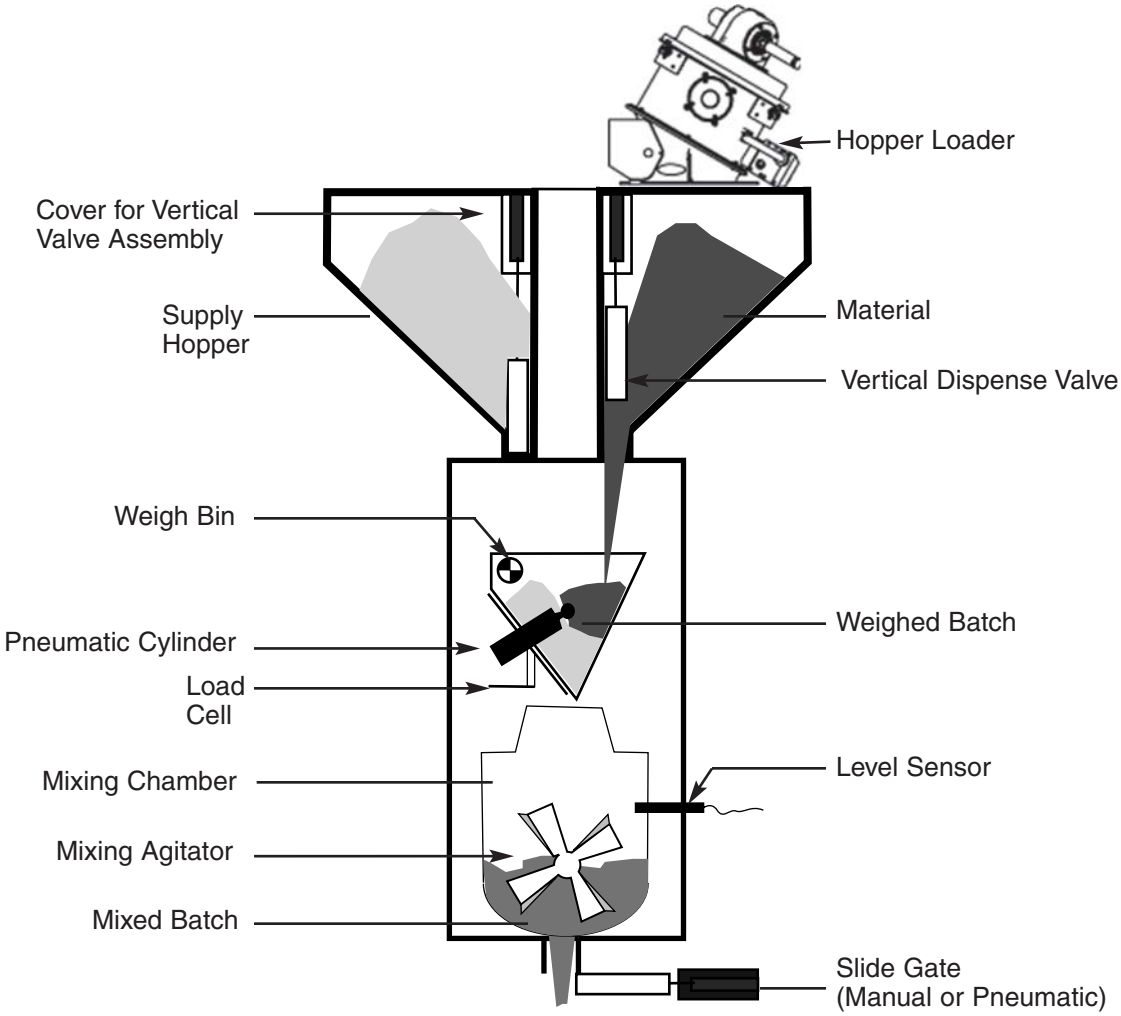
The TrueBlend SB-2 blender is a precision gain-in-weight gravimetric batch blender. The ability to precisely control the material blend improves overall quality and reduces material cost. Faster, automated start-up helps create more quality product and generates less scrap. The TrueBlend SB-2 blender automatically adjusts for variations in material type, density, and geometry.

Typical Applications

1. Unit mounted directly on the processing machine.

2. Unit operated as a centralized mixing station. If used as a centralized mixing station, a frame with reservoir hopper and exhaust box is available. The frame can be bolted to the floor.

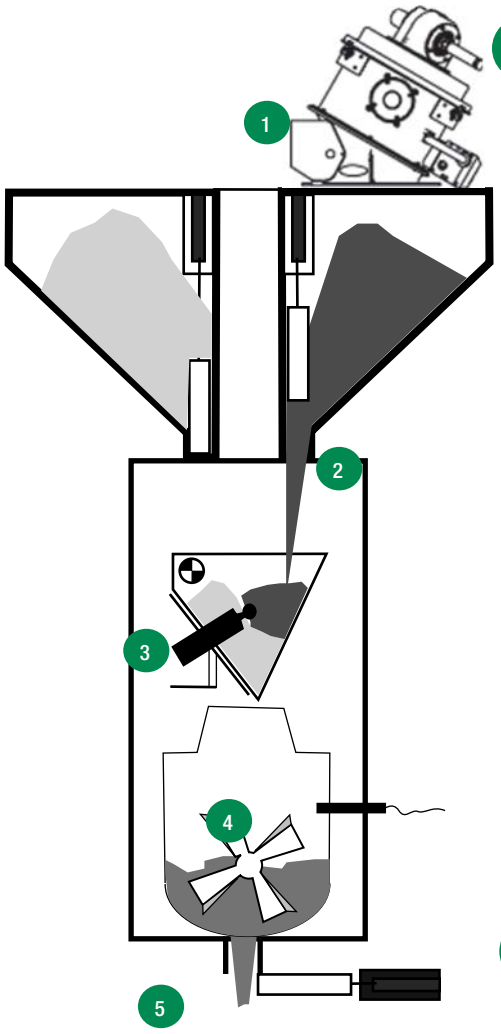
How It Works: Understanding the Parts of the TrueBlend SB-2



Note: Pneumatic slide gate is supplied when a blender is remote mounted (i.e. on surge bin, floor stand, etc.) and replaces the manual slide gate. The pneumatic discharge slide gate is not installed if a manual slide gate is installed and the unit is mounted directly on the injection molding machine.

How It Works: The TrueBlend

The TrueBlend SB-2 meters and mixes free-flowing plastic granulate (regrind and natural material) and additives. The unit mixes four to six materials, depending on model and configuration. The unit meters each ingredient into a gain-in-weight material batch hoppers with mounting flanges for one hopper loader each. All components are dispensed by pneumatic vertical cone valves and are fed into the weigh bin, which is mounted on a load cell. The pneumatic cylinder opens the weigh bin. The mixture (batch) falls into the mixing chamber and is mixed and agitated by an electrically powered mixer into a homogeneous state. The mixing chamber holds three batches. After mixing, the chamber is emptied by the discharge slide gate into the injection or extrusion process.



1 Material is dispensed into each material hopper by a hopper loader.

2 Next, the vertical valves dispense the programmed amount of material into the weigh bin.

3 The load cell determines when the batch is complete, and the pneumatic cylinder drops the batch into the mixing chamber.

4 The batch is mixed by the electrically powered mixer.

5 The discharge slide gate is opened and the mixture is emptied.

Note: After the slide gate discharges the mixture, approximately one batch remains in the mixing chamber to ensure that the next batch can be optimally mixed.

* This drawing is being used to facilitate the understanding of how the blender works and is not an actual representation of your blender.

TrueBlend SB-2 System Components

The TrueBlend SB-2 blender is comprised of a number of separate components, each having a specific function, as described below:

- TrueBlend SB-2 Controller – This is the overall "brain" of the system. An easy-to-use intuitive LCD touch screen controller with full color graphics allows quick and easy set-up. User friendly screens are configurable to match each specific injection or extrusion process. Simple menu driven touch screens ask all appropriate questions for ease of individual application set-up. The operator enters the blend recipe here. The operator can also monitor the blender control set points, current and past alarm status and complete management of material inventory data.

Recipe Entry Modes

Depending upon the control mode selected, there are several recipes entry options. The available recipe entry options determine how an operator would enter that data needed to control the blender. Simple menu driven touch screens ask all appropriate questions for ease of product recipe set-up.

The recipe entry options available are configured from the 'Setup' screen. From the Home Screen, press More/Setup/System/Recipe. From this screen you select whether your recipe is an Injection format (allows Naturals, Regrinds, Additive Naturals and Additive Batch recipe entry), or Extrusion format (allows Natural and Regrind recipe entry).

Resin and Product Names

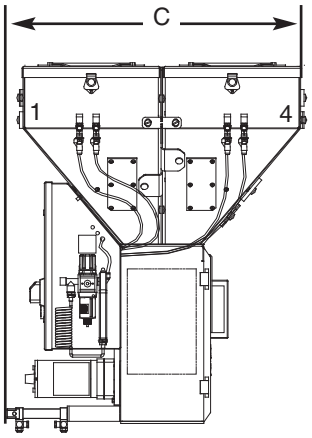
Resin names are used to identify the various resins included in the products. There can be up to 250 different resin names entered and each name can be comprised of a 10-character alphanumeric name. The TrueBlend SB-2 controller will keep inventory totals for each resin name defined.

Product names are used to identify the various production recipes of the products to be made. There can be up to 1000 different product name recipes and each name can be comprised of a 12-character alphanumeric name. The TrueBlend SB-2 controller will keep a complete inventory for each of the product names.

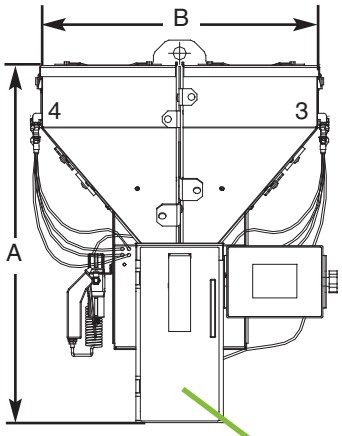
The use of the resin and product names is optional and must be enabled or disabled from the recipe set-up menu screen. From the Home Screen, press More/Setup/System/Recipe. From this screen you set Use Resin Names to 'YES'. If this is enabled, names must be in the recipes, from the Recipe screen.

SPECIFICATIONS

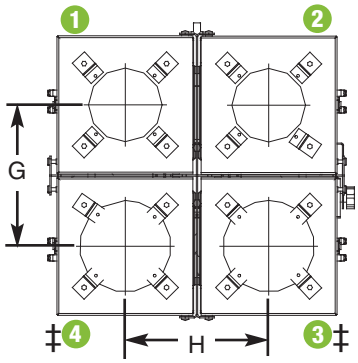
Side view



Front view



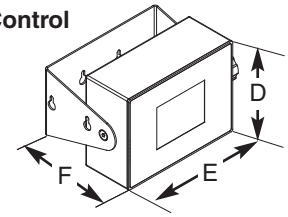
Top view§



Drain chute

Purchase the **optional material drain chute** that readily installs to the chassis opening of the blender for **fast and simple cleanout.**

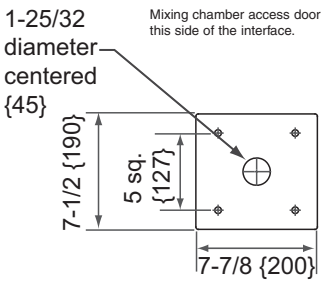
Control



MODELS	TB45-4
Performance characteristics	
Batch size lb {g}	1.0 {450}
Maximum throughput rate lb/hr {kg/hr}*	175 {79}
Bin capacity - main ingredient ft³ {liter}	0.2 {5.7}
Bin capacity - minor ingredient ft³ {liter}	0.2 {5.7}
Maximum number of materials	4
Number of vertical discharge valves	4
Number/(size) of major bin valves	2 - (40 mm)
Number/(size) of minor bin valves	2 - (20 mm)
Dimensions inches {mm}	
A - Height above mounting plate†	32.50 {825.5}
B - Hopper width and depth (square)	25.00 {635}
C - Overall depth	27.00 {686}
D - Control height	6.50 {165.1}
E - Control width	8.75 {222.3}
F - Control depth	6.75 {171.5}
G - Loader center distance	12.75 {323.9}
H - Loader center distance	12.91 {327.9}
Weight lbs {kg}	
Installed	75 {34}
Shipping	125 {57}
Voltage total amps	
115V/1 phase/60 hz	1.0
230V/1 phase/50 hz	0.5
Compressed air requirements	
Discharge valves	90 psi @ 0.2 ft³/min {6 bars @ 0.09 liters/sec}; 1/4 in. NPT fitting
Maximum loader sizes	
8 inch loaders	Number of loaders - 4

MOUNTING INTERFACE

Dimensions shown in inches and {mm}.



Mounting bolt hole size (4 holes) 7/16 inch {11.0 mm}.
Predrilled 5 x 5 mounting pattern as standard.

SPECIFICATION NOTES

* Maximum throughput rates are based on 35 lb/ft³ pelletized material, using all standard valve sizes. Use of reducer inserts will lower the rate shown.

Throughput rates are based on:

- **A 4-position blender recipe** of 20% regrind, 80% natural, 3% color and 2% additive material.

† The optional flow control valve will mount inside the chassis in the space of the manual slide valve. Conair recommends using the optional flow control valve when mounting the blender on a stand, surge bin or hopper.

‡ Hopper positions three and four are supplied with eight inch cover plates as standard.

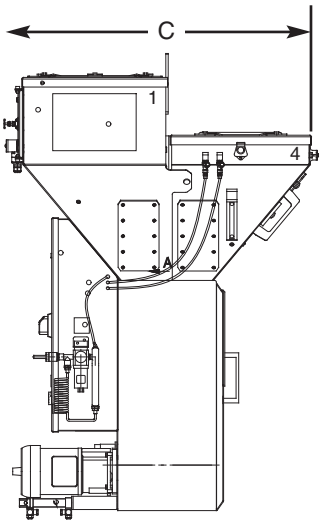
§ Numbers in top view drawings represent hopper positions.

Specifications may change without notice consult with a Conair representative for the most current information.

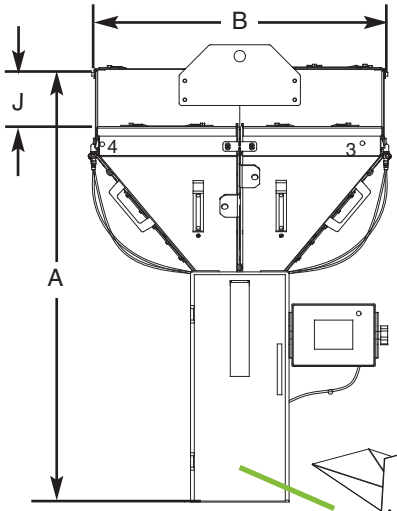
SPECIFICATIONS

TRUEBLEND™ TB100-4

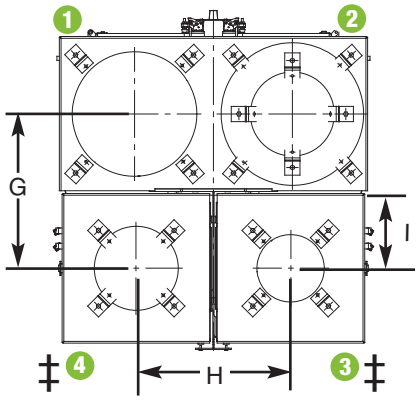
Side view



Front view



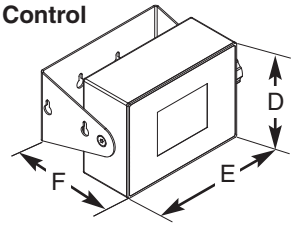
Top view§



Drain chute

Purchase the **optional material drain chute** that readily installs to the chassis opening of the blender for **fast and simple cleanout.**

Control

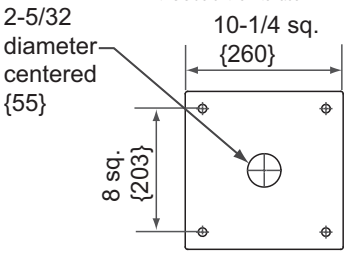


MODELS	TB100-4
Performance characteristics	
Batch size lb {g}	2.2 {1000}
Maximum throughput rate lb/hr {kg/hr}*	400 {181}
Bin capacity - main ingredient ft³ {liter}	0.6 {17}
Bin capacity - minor ingredient ft³ {liter}	0.3 {8}
Maximum number of materials	4
Number of vertical discharge valves	4
Number/(size) of major bin valves	2 - (60 mm)
Number/(size) of minor bin valves	2 - (20 mm)
Dimensions inches {mm}	
A - Height above mounting plate†	45.25 {1149}
B - Hopper width and depth (square)	30.25 {769}
C - Overall depth	32.75 {832}
D - Control height	6.50 {165.1}
E - Control width	8.75 {222.3}
F - Control depth	6.75 {171.5}
G - Loader center distance	16.25 {412.8}
H - Loader center distance	15.50 {393.7}
I - Loader center distance	7.75 {196.9}
J - Hopper height differential	6.00 {152.4}
Weight lbs {kg}	
Installed	160 {72}
Shipping	270 {122}
Voltage total amps	
115V/1 phase/60 hz	3.0
230V/1 phase/50 hz	1.5
Compressed air requirements	
Discharge valves	90 psi @ 0.2 ft³/min {6 bars @ 0.09 liters/sec}; 1/4 in. NPT fitting
Maximum loader sizes	
8 inch loaders	Number of loaders - 2
12 inch loaders	Number of loaders - 2

MOUNTING INTERFACE

Dimensions shown in inches and {mm}.

Mixing chamber access door - this side of the interface.



Mounting bolt hole size (4 holes) 9/16 in. {14.0 mm}.
Predrilled 8 x 8 mounting pattern as standard.

SPECIFICATION NOTES

* Maximum throughput rates are based on 35 lb/ft³ pelletized material, using all standard valve sizes. Use of reducer inserts will lower the rate shown.

Throughput rates are based on:

- **A 4-position blender recipe** of 20% regrind, 80% natural, 3% color and 2% additive material.

† The optional flow control valve will mount inside the chassis in the space of the manual slide valve. Conair recommends using the optional flow control valve when mounting the blender on a stand, surge bin or hopper.

‡ Hopper positions three and four are supplied with eight inch cover plates as standard.

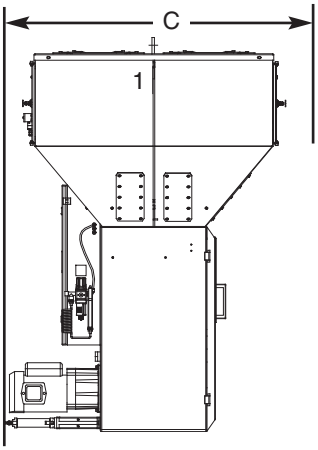
§ Numbers in top view drawings represent hopper positions.

Specifications may change without notice consult with a Conair representative for the most current information.

SPECIFICATIONS

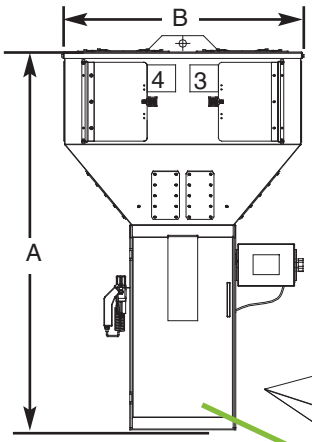
TRUEBLEND™ TB250-4 AND TB250-6

Side view



NOTE: Side and front view drawings are model TB250-4. The bin positions change for a TB250-6 see the top view.

Front view

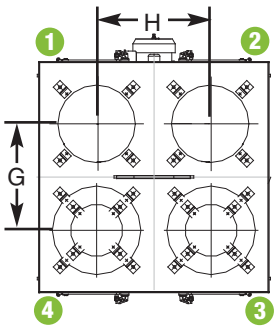


Drain chute

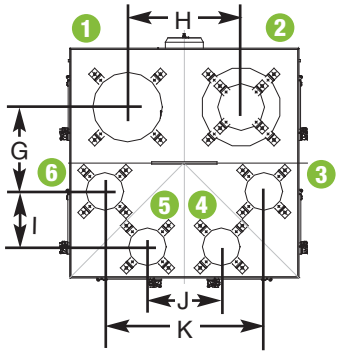
Purchase the **optional material drain chute** that readily installs to the chassis opening of the blender for **fast and simple cleanout.**

Top view§

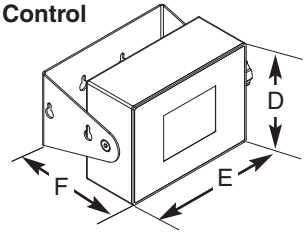
4 position‡



6 position‡



Control

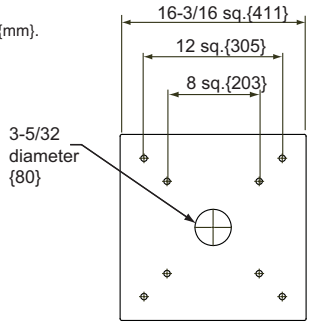


MODELS	TB250-4	TB250-6
Performance characteristics		
Batch size lb {g}	5.5 {2500}	5.5 {2500}
Maximum throughput rate lb/hr {kg/hr}*	950 {431}	750 {340}
Bin capacity - main ingredient ft³{liter}	1.6 {45.3}	2.7 {76.4}
Bin capacity - minor ingredient ft³{liter}	1.6 {45.3}	1.4 {39.6}
Maximum number of materials	4	6
Number of vertical discharge valves	4	6
Number/(size) of major bin valves	2 - (60 mm)	2 - (60 mm)
Number/(size) of minor bin valves	2 - (30 mm)	4 - (30 mm)
Dimensions inches {mm}		
A - Height above mounting plate†	57.50 {1461}	63.0 {1600}
B - Hopper width and depth (square)	36.50 {926}	40.13 {1026}
C - Overall depth	40.83 {1037}	42.67 {1084}
D - Control height	6.50 {165.1}	6.50 {165.1}
E - Control width	8.75 {222.3}	8.75 {222.3}
F - Control depth	6.75 {171.5}	6.75 {171.5}
G - Loader center distance	21.81 {554.0}	14.88 {377.8}
H - Loader center distance	20.13 {511.2}	20.0 {508}
I - Loader center distance	NA	9.75 {247.7}
J - Loader center distance	NA	13.00 {330.2}
K - Loader center distance	NA	28.00 {711.2}
Weight lbs {kg}		
Installed	320 {145}	400 {182}
Shipping	440 {200}	520 {236}
Voltage total amps		
115V/1 phase/60 hz	6.3	6.3
230V/1 phase/50 hz	3.2	3.2
Compressed air requirements		
Discharge valves	90 psi @ 0.2 ft³/min {6 bars @ 0.09 liters/sec}; 1/4 in. NPT fitting	
Maximum loader sizes		
15 inch loaders - number of loaders -	4	2
8 inch loaders- number of loaders -	NA	4

MOUNTING INTERFACE

Dimensions shown in inches and {mm}.

Mixing chamber access door - this side of the interface.



Mounting bolt hole size (8 holes) 9/16 inch {14.0 mm}.
Predrilled 8 x 8 and 12 X 12 mounting pattern as standard.

SPECIFICATION NOTES

* Maximum throughput rates are based on 35 lb/ft³ pelletized material, using all standard valve sizes. Use of reducer inserts will lower the rate shown.

Throughput rates are based on:

- **A 4-position blender recipe** of 20% regrind, 80% natural, 3% color and 2% additive material.
- **A 6-position blender recipe** of 20% regrind, 80% natural, 3% color at position 3, 2% additive at position 4, 3% additive at position 5 and 2% additive at position 6.

† The optional flow control valve will mount inside the chassis in the space of the manual slide valve. Conair recommends using the optional flow control valve when mounting the blender on a stand, surge bin or hopper.

‡ TB250-4 hopper positions two and four are supplied with 12-8 adapters with eight inch cover plates as standard. TB250-6 hopper position two is supplied with a 12-8 adapter with an eight inch cover.

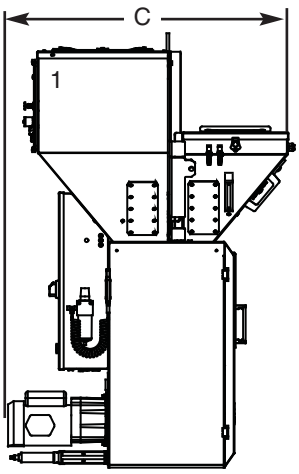
§ Numbers in top view drawings represent hopper positions.

Specifications may change without notice consult with a Conair representative for the most current information.

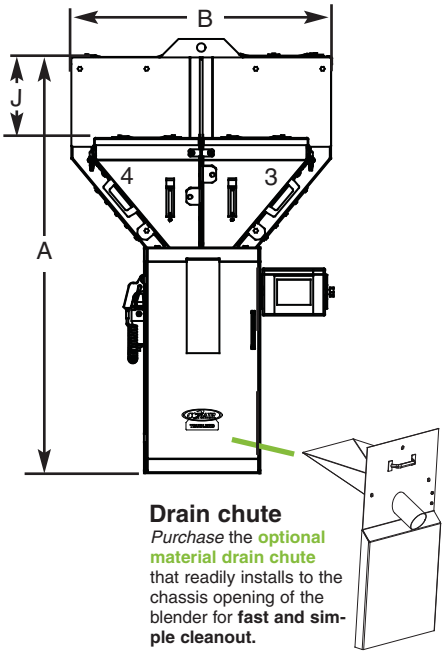
SPECIFICATIONS

TRUEBLEND™ TB250R-4

Side view

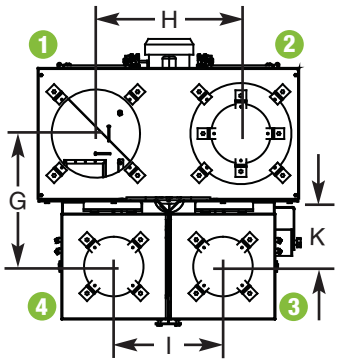


Front view

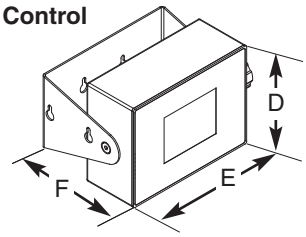


Top view§

4 position‡



Control



Drain chute

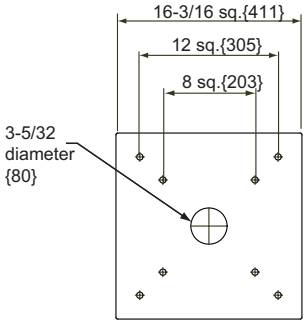
Purchase the **optional material drain chute** that readily installs to the chassis opening of the blender for **fast and simple cleanout.**

MODELS	TB250R-4
Performance characteristics	
Batch size lb {g}	5.5 {2500}
Maximum throughput rate lb/hr {kg/hr}*	850 {386}
Bin capacity - main ingredient ft³{liter}	1.6 {45.3}
Bin capacity - minor ingredient ft³{liter}	0.3 {8}
Maximum number of materials	4
Number of vertical discharge valves	4
Number/(size) of major bin valves	2 - {60 mm}
Number/(size) of minor bin valves (removable)	2 - {20 mm}
Dimensions inches {mm}	
A - Height above mounting plate†	57.75 {1467}
B - Hopper width and depth (square)	36.50 {926}
C - Overall depth	38.88 {988}
D - Control height	6.50 {165.1}
E - Control width	8.75 {222.3}
F - Control depth	6.75 {171.5}
G - Loader center distance	18.44 {468.3}
H - Loader center distance	20.13 {511.2}
I - Loader center distance	15.13 {388.2}
J - Loader center distance	11.25 {285.8}
K - Loader center distance	9.00 {228.6}
Weight lbs {kg}	
Installed	280
Shipping	400
Voltage total amps	
115V/1 phase/60 hz	6.3
230V/1 phase/50 hz	3.2
Compressed air requirements	
Discharge valves	90 psi @ 0.2 ft³/min {6 bars @ 0.09 liters/sec}; 1/4 in. NPT fitting
Maximum loader sizes	
15 inch loaders - number of loaders -	2
8 inch loaders- number of loaders -	2

MOUNTING INTERFACE

Dimensions shown in inches and {mm}.

Mixing chamber access door - this side of the interface.



Mounting bolt hole size (8 holes) 9/16 inch {14.0 mm}.
Predrilled 8 x 8 and 12 X 12 mounting pattern as standard.

SPECIFICATION NOTES

* Maximum throughput rates are based on 35 lb/ft³ pelletized material, using all standard valve sizes. Use of reducer inserts will lower the rate shown.

Throughput rates are based on:

- **A 4-position blender recipe** of 20% regrind, 80% natural, 3% color and 2% additive material.

† The optional flow control valve will mount inside the chassis in the space of the manual slide valve. Conair recommends using the optional flow control valve when mounting the blender on a stand, surge bin or hopper.

‡ TB250R-4 hopper position two is supplied with a 12-8 adapter with an eight inch cover plate as standard. Position three and four are supplied with hand-fill lids.

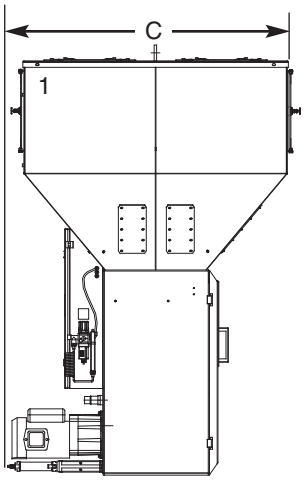
§ Numbers in top view drawings represent hopper positions.

Specifications may change without notice consult with a Conair representative for the most current information.

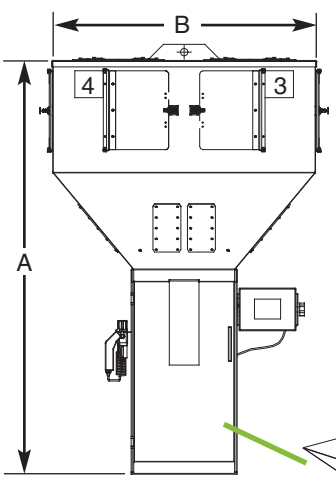
TRUEBLEND™ TB500-4 AND TB500-6

SPECIFICATIONS

Side view

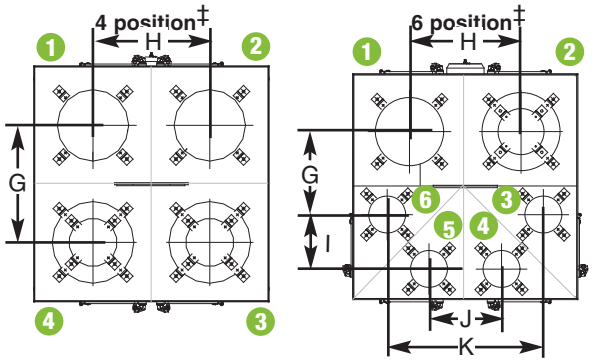


Front view



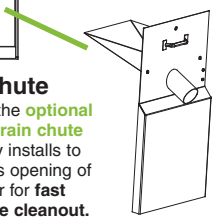
NOTE: Side and front view drawings are model TB500-4. The bin positions change for a TB500-6, see the top view.

Top view

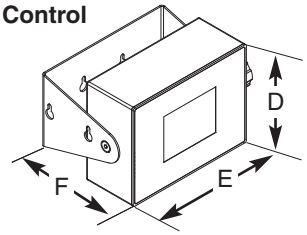


Drain chute

Purchase the **optional material drain chute** that readily installs to the chassis opening of the blender for **fast and simple cleanout.**



Control

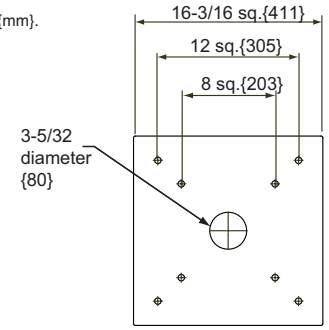


MODELS	TB500-4	TB500-6
Performance characteristics		
Batch size lb {g}	11 {5000}	11 {5000}
Maximum throughput rate lb/hr {kg/hr}*	1500 {680}	1150 {522}
Bin capacity - main ingredient ft³ {liter}	2.7 {76.4}	2.7 {76.4}
Bin capacity - minor ingredient ft³ {liter}	2.7 {76.4}	1.35 {38.2}
Maximum number of materials	4	6
Number of vertical discharge valves	4	6
Number/(size) of major bin valves	2 - (100/60 mm)	2 - (100/60 mm)
Number/(size) of minor bin valves	2 - (30 mm)	4 - (30 mm)
Dimensions inches {mm}		
A - Height above mounting plate†	63.00 {1600}	63.00 {1600}
B - Hopper width and depth (square)	40.13 {1026}	40.13 {1026}
C - Overall depth	43.00 {1092}	43.00 {1092}
D - Control height	6.50 {165.1}	6.50 {165.1}
E - Control width	8.75 {222.3}	8.75 {222.3}
F - Control depth	6.75 {171.5}	6.75 {171.5}
G - Loader center distance	22.00 {558.8}	14.88 {377.8}
H - Loader center distance	22.00 {558.8}	20.00 {508.0}
I - Loader center distance	NA	9.75 {247.7}
J - Loader center distance	NA	13.00 {330.2}
K - Loader center distance	NA	28.00 {711.2}
Weight lbs {kg}		
Installed	400 {182}	400 {182}
Shipping	520 {236}	520 {236}
Voltage total amps		
115V/1 phase/60 hz	6.3	6.3
230V/1 phase/50 hz	3.2	3.2
Compressed air requirements		
Discharge valves	90 psi @ 0.2 ft³/min {6 bars @ 0.09 liters/sec}; 1/4 in. NPT fitting	
Maximum loader sizes		
15 inch loaders - number of loaders -	4	2
8 inch loaders - number of loaders -	NA	4

MOUNTING INTERFACE

Dimensions shown in inches and {mm}.

Mixing chamber access door - this side of the interface.



Mounting bolt hole size (8 holes) 9/16 inch {14.0 mm}.
Predrilled 8 x 8 and 12 X 12 mounting pattern as standard.

SPECIFICATION NOTES

* Maximum throughput rates are based on 35 lb/ft³ pelletized material, using all standard valve sizes. Use of reducer inserts will lower the rate shown.

Throughput rates are based on:

- **A 4-position blender** recipe of 20% regrind, 80% natural, 3% color and 2% additive material.
- **A 6-position blender** recipe of 20% regrind, 80% natural, 3% color at position 3, 2% additive at position 4, 3% additive at position 5 and 2% additive at position 6.

† The optional flow control valve will mount inside the chassis in the space of the manual slide valve. Conair recommends using the optional flow control valve when mounting the blender on a stand, surge bin or hopper.

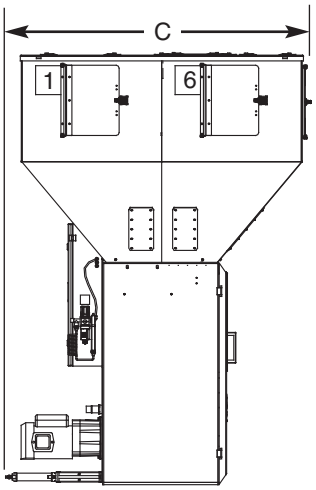
‡ TB500-4 hopper positions three and four are supplied with 12-8 adapters with 8 inch cover plates as standard. TB500-6 hopper position two is supplied with a 12-8 adapter and an 8 inch cover plate as standard.

Specifications may change without notice, consult with a Conair representative for the most current information.

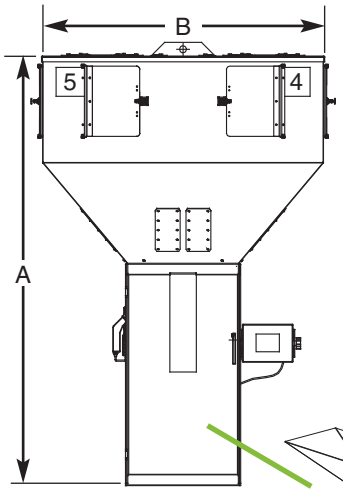
SPECIFICATIONS

TRUEBLEND™ TB900-4 AND TB900-6

Side view

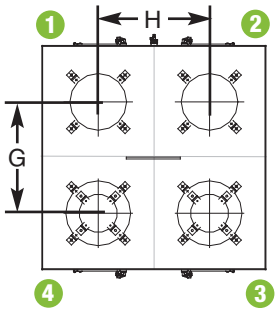


Front view

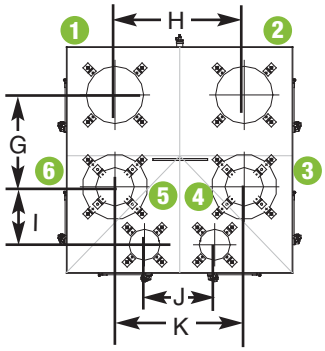


Top view§

4 position‡



6 position‡

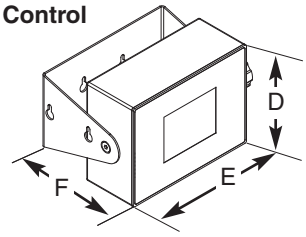


NOTE: Side and front view drawings are model TB900-6. The bin positions change for a TB900-4, see the top view.

Drain chute

Purchase the **optional material drain chute** that readily installs to the chassis opening of the blender for **fast and simple cleanout.**

Control

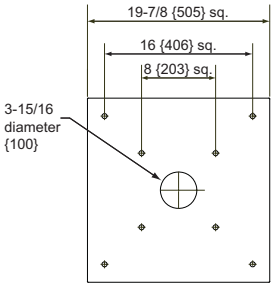


MODELS	TB900-4	TB900-6
Performance characteristics		
Batch size lb {g}	19.8 {9000}	19.8 {9000}
Maximum throughput rate lb/hr {kg/hr}*	3500 {1588}	2800 {1270}
Bin capacity - main ingredient ft³{liter}	4.4 {124.6}	4.4 {124.6}
Bin capacity - minor ingredient ft³{liter}	4.4 {124.6}	2.2 {62.3}
Maximum number of materials	4	6
Number of vertical discharge valves	4	6
Number/(size) of major bin valves	2 - (100 mm)	2 - (100 mm)
Number/(size) of minor bin valves	2 - (60 mm)	4 - (60 mm)
Dimensions inches {mm}		
A - Height above mounting plate†	74.75 {1896}	74.75 {1896}
B - Hopper width and depth (square)	48.00 {1219}	48.00 {1219}
C - Overall depth	51.00 {1296}	51.00 {1296}
D - Control height	6.50 {165.1}	6.50 {165.1}
E - Control width	8.75 {222.3}	8.75 {222.3}
F - Control depth	6.75 {171.5}	6.75 {171.5}
G - Loader center distance	24.00 {609.6}	24.00 {609.6}
H - Loader center distance	24.00 {609.6}	18.00 {457.2}
I - Loader center distance	NA	11.19 {284.2}
J - Loader center distance	NA	15.00 {381.0}
K - Loader center distance	NA	33.44 {849.3}
Weight lbs {kg}		
Installed	550 {249}	550 {249}
Shipping	700 {318}	700 {318}
Voltage total amps		
115V/1 phase/60 hz	6.3	6.3
230V/1 phase/50 hz	3.2	3.2
Compressed air requirements		
Discharge valves	90 psi @ 0.2 ft³/min {6 bars @ 0.09 liters/sec}; 1/4 in. NPT fitting	
Maximum loader sizes		
20 inch loaders - number of loaders	4	2
15 inch loaders - number of loaders	NA	2
8 inch loaders - number of loaders	NA	2

MOUNTING INTERFACE

Dimensions shown in inches and {mm}.

Mixing chamber access door - this side of the interface.



Mounting bolt hole size (8 holes) 9/16 inch {14.0 mm}.
Predrilled 8 x 8 and 16 X 16 mounting pattern as standard.

SPECIFICATION NOTES

* Maximum throughput rates are based on 35 lb/ft³ pelletized material, using all standard valve sizes. Use of reducer inserts will lower the rate shown.

Throughput rates are based on:

- **A 4-position blender recipe** of 20% regrind, 80% natural, 3% color and 2% additive material.
- **A 6-position blender recipe** of 20% regrind, 80% natural, 3% color at position 3, 2% additive at position 4, 3% additive at position 5 and 2% additive at position 6.

† The optional flow control valve will mount inside the chassis in the space of the manual slide valve. Conair recommends using the optional flow control valve when mounting the blender on a stand, surge bin or hopper.

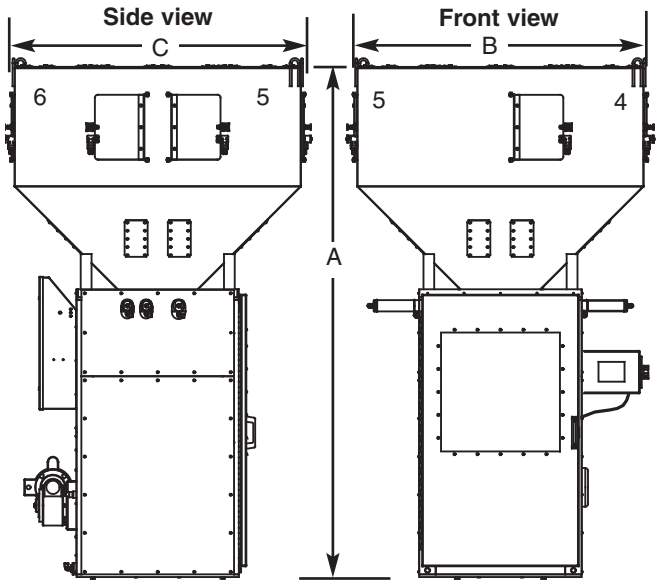
‡ TB900-4 hopper positions three and four are supplied with 12-8 adapters with eight inch cover plates as standard. TB900-6 hopper positions three and six are supplied with 12-8 adapters and eight inch cover plates as standard.

§ Numbers in top view drawings represent hopper positions.

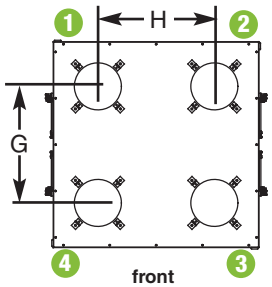
Specifications may change without notice, consult with a Conair representative for the most current information.

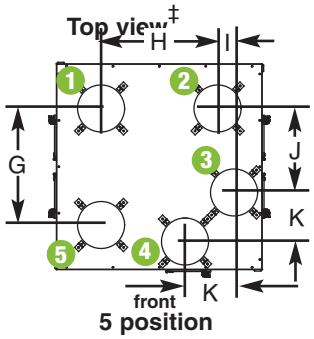
SPECIFICATIONS

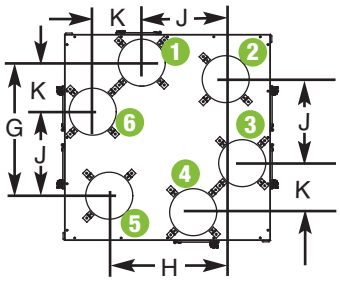
TRUEBLEND™ TB1800-4, TB1800-5 AND TB1800-6

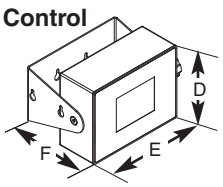


NOTE: Side and front view drawings are shown for model TB1800-6. The bin positions change for a TB1800-4 and TB1800-5 models, see the top view.



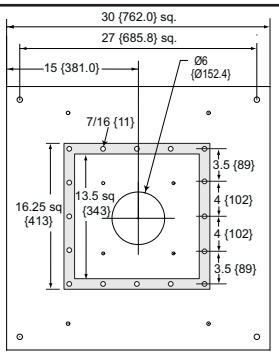






MODELS	TB1800-4	TB1800-5	TB1800-6
Performance characteristics			
Batch size lbs {g} (grams or kilograms)	40 {18000}	40 {18000}	40 {18000}
Maximum throughput lbs/hr {kg/hr}*	6000 {2722}	5500 {2495}	4800 {2177}
Bin capacity - main ingredient ft³{liter}	6 {170}	6 {170}	6 {170}
Bin capacity - minor ingredient ft³{liter}	6 {170}	4 {113}	4 {113}
Maximum number of materials	4	5	6
Number of major valves	4 (5X5)	3 (5X5)	2 (5X5)
Number of minor valves	0	2 (2X5)	4 (2X5)
Dimensions inches {mm}			
A - Height above mounting plate †	94.4 {2397.8}	94.4 {2397.8}	94.4 {2397.8}
B - Hopper width and depth (square)	53.0 {1346.2}	53.0 {1346.2}	53.0 {1346.2}
C - Overall depth	53.0 {1346.2}	53.0 {1346.2}	53.0 {1346.2}
D - Controller height	6.50 {165.1}	6.50 {165.1}	6.50 {165.1}
E - Controller width	8.75 {222.3}	8.75 {222.3}	8.75 {222.3}
F - Controller depth	6.75 {171.5}	6.75 {171.5}	6.75 {171.5}
G - Loader center distance	30.00 {762.0}	30.00 {762.0}	30.00 {762.0}
H - Loader center distance	30.00 {762.0}	30.00 {762.0}	30.00 {762.0}
I - Loader center distance	N/A	4.25 {108.0}	4.25 {108.0}
J - Loader center distance	N/A	21.63 {549.3}	21.63 {549.3}
K - Loader center distance	N/A	12.63 {320.7}	12.63 {320.7}
Weight lbs {kg}			
Installed	1465 {665}	1498 {679}	1532 {695}
Shipping	1715 {778}	1748 {793}	1782 {808}
Voltage total amps			
220V/1 phase/50 hz	11.3	11.3	11.3
220V/1 phase/60 hz	11.3	11.3	11.3
240V/3 phase/60 hz	7.5	7.5	7.5
400V/3 phase/50 hz	5.0	5.0	5.0
480V/3 phase/60 hz	4.5	4.5	4.5
575V/3 phase/60 hz	3.9	3.9	3.9
Compressed air requirements			
	0.3 ft³/min @ 90 psi {6 bars @ 0.14 liters/sec} 3/8 in. NPT fitting		
Maximum loader sizes			
	4 DL25 | 2 DL25 | 2 DL15 | 2 DL25 | 4 DL15	3 DL25 | 3 DL25 | 2 AR10 | 2 DL25 | 4 AR10	2 DL25 | 2 DL15 | 4 DL20 | 2 DL15 | 4 DL20 | 2 AR10

MOUNTING INTERFACE



Dimensions shown in inches and {mm}.

SPECIFICATION NOTES

* Maximum throughput rates are based on 35 lb/ft³ pelletized material, using all standard valve sizes. Use of reducer inserts will lower the rate shown.

Throughput rates are based on:

- **A 4-position blender recipe** of 50% natural, 40% natural, 5% additive material and 5% additive material.
- **A 5-position blender recipe** of 50% natural, 20% natural, 20% natural, 5% additive material and 5% additive material.
- **A 6-position blender recipe** of 50% natural, 20% natural, 10% natural, 10% natural, 5% additive material and 5% additive material.

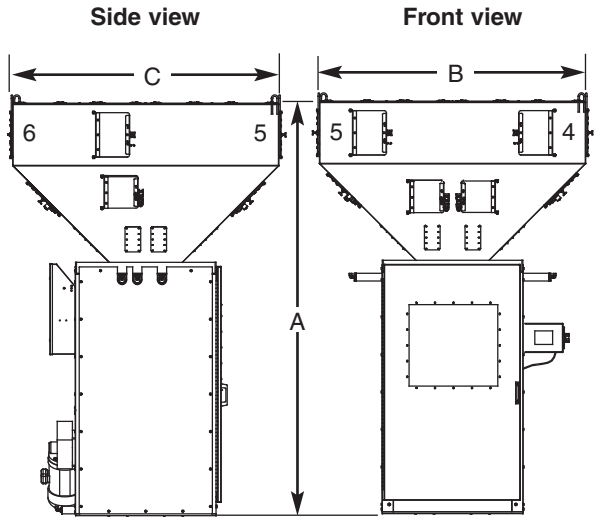
† The optional flow control valve will mount inside the chassis in the space of the manual slide valve. Conair recommends using the optional flow control valve when mounting the blender on a stand, surge bin or hopper.

‡ Numbers in top view drawings represent hopper positions.

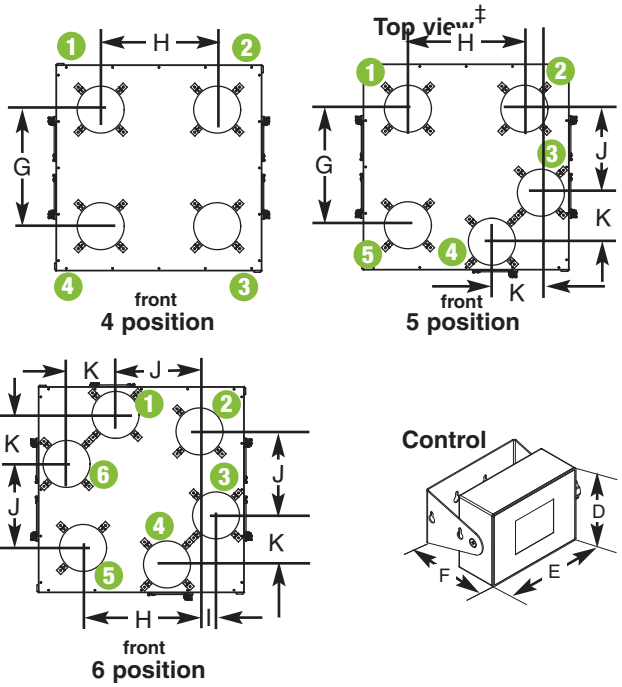
Specifications may change without notice, consult with a Conair representative for the most current information.

SPECIFICATIONS

TRUEBLEND™ TB2500-4, TB2500-5 AND TB2500-6

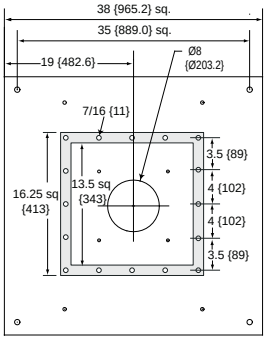


NOTE: Side and front view drawings are shown for model TB2500-6. The bin positions change for a TB2500-4 and TB2500-5 models, see the top view.



MODELS	TB2500-4	TB2500-5	TB2500-6
Performance characteristics			
Batch size lbs {g} (grams or kilograms)	55 {25000}	55 {25000}	55 {25000}
Maximum throughput lbs/hr {kg/hr}*	9000 {4082}	8000 {3629}	7000 {3175}
Bin capacity - main ingredient ft³{liter}	10 {283}	10 {283}	10 {283}
Bin capacity - minor ingredient ft³{liter}	10 {283}	5 {142}	5 {142}
Maximum number of materials	4	5	6
Number of major valves	4 (6X6)	3 (6X6)	2 (6X6)
Number of minor valves	0	2 (2X6)	4 (2X6)
Dimensions inches {mm}			
A - Height above mounting plate†	111.5 {2832.1}	111.5 {2832.1}	111.5 {2832.1}
B - Hopper width and depth (square)	72 {1828.0}	72 {1828.0}	72 {1828.0}
C - Overall depth	72 {1828.0}	72 {1828.0}	72 {1828.0}
D - Controller height	6.50 {165.1}	6.50 {165.1}	6.50 {165.1}
E - Controller width	8.75 {222.3}	8.75 {222.3}	8.75 {222.3}
F - Controller depth	6.75 {171.5}	6.75 {171.5}	6.75 {171.5}
G - Loader center distance	35.75 {908.1}	35.75 {908.1}	35.75 {908.1}
H - Loader center distance	35.75 {908.1}	35.75 {908.1}	35.75 {908.1}
I - Loader center distance	NA	10.5 {266.7}	10.5 {266.7}
J - Loader center distance	NA	26.13 {663.6}	26.13 {663.6}
K - Loader center distance	NA	20.0 {508.0}	20.0 {508.0}
Weight lbs {kg}			
Installed	2483 {1126}	2531 {1148}	2580 {1170}
Shipping	2783 {1262}	2831 {1080}	2880 {1306}
Voltage total amps			
240V/3 phase/60 hz	10.3	10.3	10.3
400V/3 phase/50 hz	7.7	7.7	7.7
480V/3 phase/60 hz	6.4	6.4	6.4
575V/3 phase/60 hz	5.6	5.6	5.6
Compressed air requirements			
	0.3 ft³/min @ 90 psi {6 bars @ 0.14 liters/sec} 3/8 in. NPT fitting		
Maximum loader sizes			
Number of 25 inch loaders	4	5	6

MOUNTING INTERFACE



Dimensions shown in inches and {mm}.

SPECIFICATION NOTES

* Maximum throughput rates are based on 35 lb/ft³ pelletized material, using all standard valve sizes. Use of reducer inserts will lower the rate shown.

Throughput rates are based on:

- **A 4-position blender recipe** of 50% natural, 40% natural, 5% additive material and 5% additive material.
- **A 5-position blender recipe** of 50% natural, 20% natural, 20% natural, 5% additive material and 5% additive material.
- **A 6-position blender recipe** of 50% natural, 20% natural, 10% natural, 10% natural, 5% additive material and 5% additive material.

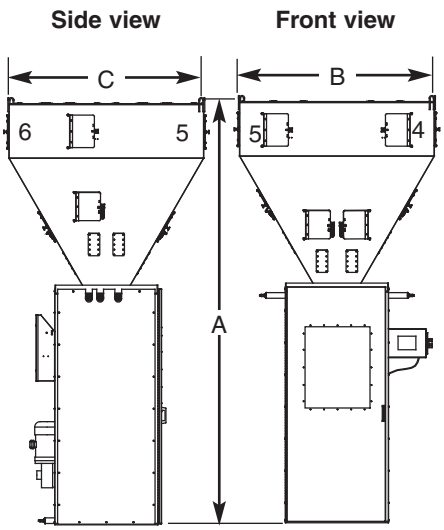
† The optional flow control valve will mount inside the chassis in the space of the manual slide valve. Conair recommends using the optional flow control valve when mounting the blender on a stand, surge bin or hopper.

‡ Numbers in top view drawings represent hopper positions.

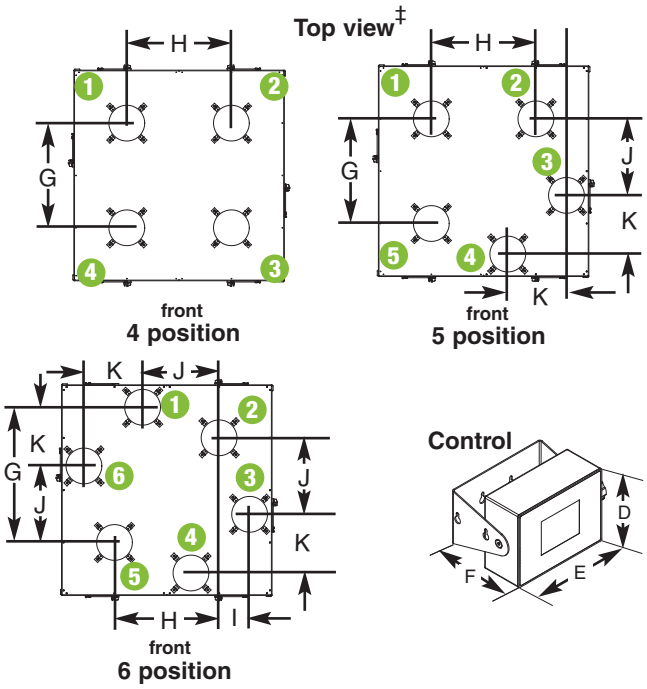
Specifications may change without notice, consult with a Conair representative for the most current information.

SPECIFICATIONS

TRUEBLEND™ TB3500-4, TB3500-5 AND TB3500-6

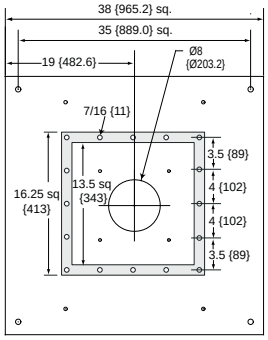


NOTE: Side and front view drawings are shown for model TB3500-6. The bin positions change for a TB3500-4 and TB3500-5 models, see the top view.



MODELS	TB3500-4	TB3500-5	TB3500-6
Performance characteristics			
Batch size lbs {g}	77 {35000}	77 {35000}	77 {35000}
Maximum throughput lbs/hr {kg/hr}*	12000 {5443}	10500 {4763}	9000 {4082}
Bin capacity - main ingredient ft³{liter}	18 {510}	18 {510}	18 {510}
Bin capacity - minor ingredient ft³{liter}	18 {510}	9 {255}	9 {255}
Maximum number of materials	4	5	6
Number of major valves	4 (6X6)	3 (6X6)	2 (6X6)
Number of minor valves	0	2 (2X6)	4 (2X6)
Dimensions inches {mm}			
A - Height above mounting plate†	156 {3962}	156 {3962}	156 {3962}
B - Width	72 {1828}	72 {1828}	72 {1828}
C - Depth	72 {1828}	72 {1828}	72 {1828}
D - Controller height	6.50 {165.1}	6.50 {165.1}	6.50 {165.1}
E - Controller width	8.75 {222.3}	8.75 {222.3}	8.75 {222.3}
F - Controller depth	6.75 {171.5}	6.75 {171.5}	6.75 {171.5}
G - Loader center distance	35.75 {908.1}	35.75 {908.1}	35.75 {908.1}
H - Loader center distance	35.75 {908.1}	35.75 {908.1}	35.75 {908.1}
I - Loader center distance	NA	10.5 {266.7}	10.5 {266.7}
J - Loader center distance	NA	26.13 {663.6}	26.13 {663.6}
K - Loader center distance	NA	20.0 {508.0}	20.0 {508.0}
Weight lbs {kg}			
Installed	2982 {1353}	3049 {1383}	3115 {1413}
Shipping	3282 {1489}	3349 {1519}	3415 {1549}
Voltage total amps			
240V/3 phase/60 hz	10.3	10.3	10.3
400V/3 phase/50 hz	7.7	7.7	7.7
480V/3 phase/60 hz	6.4	6.4	6.4
575V/3 phase/60 hz	5.6	5.6	5.6
Compressed air requirements			
	0.3 ft³/min @ 90 psi {6 bars @ 0.14 liters/sec} 3/8 in. NPT fitting		
Maximum loader sizes			
Number of 25 inch loaders	4	5	6

MOUNTING INTERFACE



Dimensions shown in inches and {mm}.

SPECIFICATION NOTES

* Maximum throughput rates are based on 35 lb/ft³ pelletized material, using all standard valve sizes. Use of reducer inserts will lower the rate shown.

Throughput rates are based on:

- **A 4-position blender recipe** of 50% natural, 40% natural, 5% additive material and 5% additive material.
- **A 5-position blender recipe** of 50% natural, 20% natural, 20% natural, 5% additive material and 5% additive material.
- **A 6-position blender recipe** of 50% natural, 20% natural, 10% natural, 10% natural, 5% additive material and 5% additive material.

† The optional flow control valve will mount inside the chassis in the space of the manual slide valve. Conair recommends using the optional flow control valve when mounting the blender on a stand, surge bin or hopper.

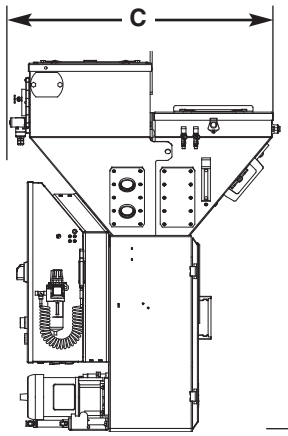
‡ Numbers in top view drawings represent hopper positions.

Specifications may change without notice, consult with a Conair representative for the most current information.

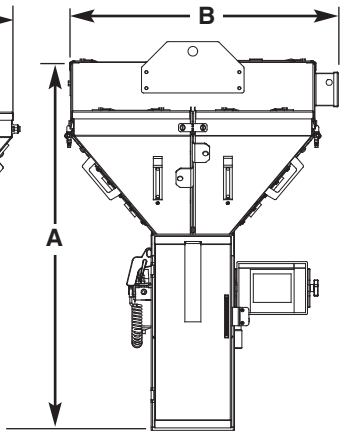
SPECIFICATIONS

TRUEBLEND™ HIGH HEAT MODELS

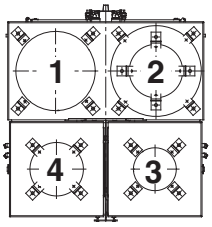
Model TBA/TBH100



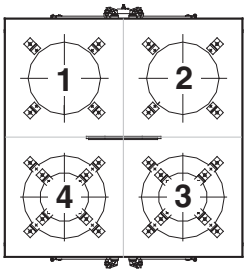
SIDE VIEW



FRONT VIEW

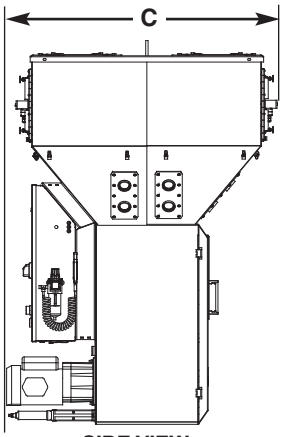


TOP VIEW TBA/H100

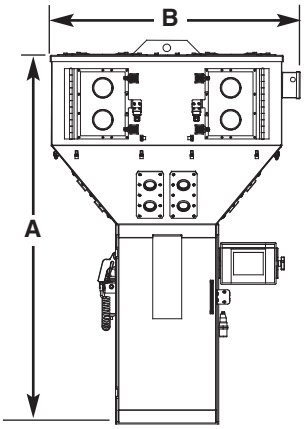


TOP VIEW TBA/H250-500

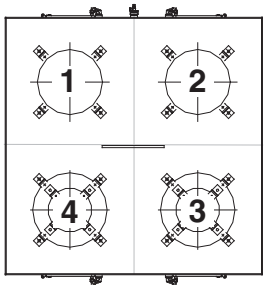
Model TBA/TBH250 - TBA/TBH900



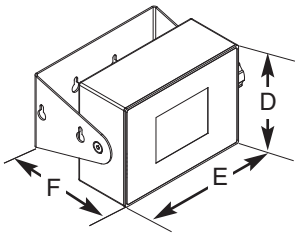
SIDE VIEW



FRONT VIEW



TOP VIEW TBA/H900



CONTROL

MODELS	TBA/TBH100	TBA/TBH250	TBA/TBH500	TBA/TBH900
Performance characteristics				
Batch size lbs {g}	2.2 {1000}	5.5 {2500}	11 {5000}	19.8 {9000}
Maximum throughput lbs/hr {kg/hr}*	400 {181}	950 {431}	1500 {680}	3500 {1588}
Bin capacity - main ingredient ft³ {liter}	0.6 {17}	1.6 {45.3}	2.7 {76.4}	4.4 {124.6}
Bin capacity - minor ingredient ft³ {liter}	0.3 {8}	1.6 {45.3}	2.7 {76.4}	4.4 {124.6}
Maximum number of materials	4	4	4	4
Number of vertical discharge valves	4	4	4	4
Number of major bin valves	2 - (60 mm)	2 - (60 mm)	2 - (100/60 mm)	2 - (100 mm)
Number of minor bin valves	2 - (20 mm)	2 - (30 mm)	2 - (30 mm)	2 - (60 mm)
Dimensions inches {mm}				
A - Height above mounting plate†	45.25 {1149}	57.50 {1461}	63.00 {1600}	74.75 {1896}
B - Width	30.25 {769}	36.50 {926}	40.13 {1026}	48.00 {1219}
C - Depth	32.75 {832}	40.83 {1037}	43.00 {1092}	51.00 {1296}
D - Controller height	6.50 {165.1}	6.50 {165.1}	6.50 {165.1}	6.50 {165.1}
E - Controller width	8.75 {222.3}	8.75 {222.3}	8.75 {222.3}	8.75 {222.3}
F - Controller depth	6.75 {171.5}	6.75 {171.5}	6.75 {171.5}	6.75 {171.5}
Weight lbs {kg}				
Installed	160 {72}	320 {145}	400 {182}	550 {249}
Shipping	270 {122}	440 {120}	520 {236}	700 {318}
Voltage Total amps				
115V/1 phase/60 Hz	3.0	6.3	6.3	6.3
230V/1 phase/50 Hz	1.5	3.2	3.2	3.2
Compressed air requirements				
Discharge valves	90 psi @ 0.2 ft³/min. {6 bars @0.09 liters/sec}, 1/4 inch NPT fitting			
Maximum loader sizes‡				
20 inch loaders - number of loaders	NA	NA	NA	4
15 inch loaders - number of loaders	NA	4	4	NA
12 inch loaders - number of loaders	2	NA	NA	NA
8 inch loaders - number of loaders	2	NA	NA	NA

SPECIFICATION NOTES:

* Maximum throughput rates are based on 35 lb/ft³ pelletized material and using all of the standard valve sizes. Use of valve inserts will lower the rate shown.

Throughput rates are based on:

- **A 4-position blender recipe** of 20% regrind, 80% natural, 3% color and 2% additive material.

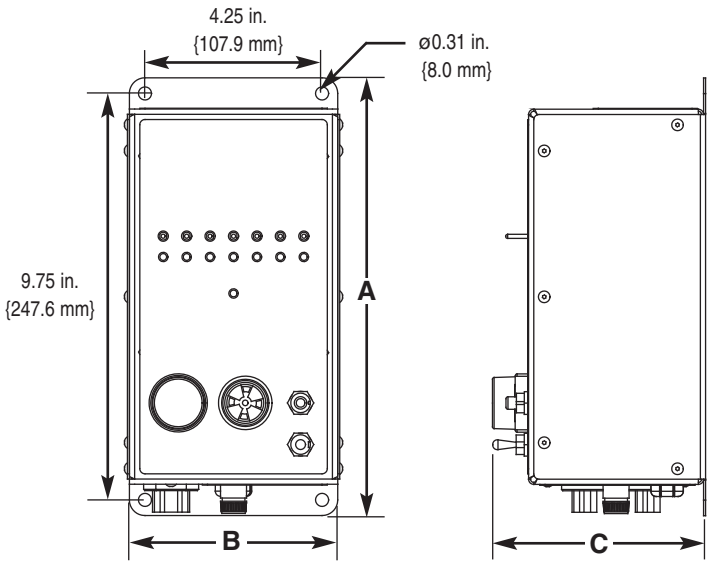
† The optional flow control valve will mount inside the chassis in the space of the manual slide valve. Conair recommends using the optional flow control valve when mounting the blender on a stand, surge bin or hopper.

‡ For loader mounting dimension details, refer to the corresponding TrueBlend blender specifications sheet.

Specifications may change without notice, consult with a Conair representative for the most current information.

LEVEL ALARM CONTROL

SPECIFICATIONS



MODELS	LAC-1
Dimensions inches {mm}	
A - Height	10.5 {267}
B - Width	5.2 {132}
C - Depth	5.0 {127}
Approximate weight lb {kg}	
Installed	7 {3.2}
Shipping	17 {7.7}
Voltages full load amps*	
110V/1 phase/60Hz	5
220V/1 phase/50Hz	2.5
Line voltage output*	
110V/1 phase/60Hz	(2) 110V @ 2.5 amps
220V/1 phase/50Hz	(2) 220V @ 1.3 amps
Dry contact voltage outputs	
	24VDC @ 8 amps 115VAC @ 10 amps

SPECIFICATION NOTES:

*The line voltage output is determined by the voltage requirements of the LAC-1.

Specifications can change without notice. Contact a Conair representative for the most current information.

OPTIONS

- Sensor cable length extensions (6 m, 20 m)
- Additional capacitance sensors (for use with a surge bin or other material sources)
- Remote alarms (compatible with Conair's Universal Alarm Box)

APPLICATION NOTE:

The Level Alarm Control module has seven (7) capacitance sensor connections. Up to six (6) can be used for the monitoring of material levels. The seventh sensor can be used with a surge bin or other material storage device located beneath the blender. The eighth connection is a dry contact output with (1) N.O. (normally opened) and (1) N.C. (normally closed) contact that can be connected to other processing equipment or monitoring devices. (For example, an output used with an alarm connected to a PC monitoring system.)

Capacitance Sensor Connections

The Level Alarm Control module's capacitance sensors are positioned within a blender's material bin sight glass to provide adjustable material level detection. The sensor can be positioned high on the sight glass (left image) to monitor material levels of high throughput applications or low on the sight glass (right image) to monitor material levels of low or less critical throughput applications.

Remote Alarms Option

Satisfactory State:
When there is no alarm condition this outlet will supply a continuous flow of 110V/220V single phase power. Only during an alarm will the power supply be terminated.

Alarm State:
During an alarm condition this outlet will energize any 110V/220V remote alarm indictor that is connected. This outlet will not have power at any time other than during alarm conditions.

SECTION
3

Installation

Unpacking the Boxes 3-2

Preparing for Installation 3-3

Preparing to Mount the Blender 3-4

Mounting the Blender 3-5

Mounting the Control 3-5

Layout of the Material Hoppers 3-6

Mounting the Loaders 3-6

Connecting Compressed Air 3-7

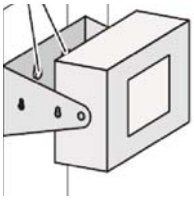
Installing the Weigh Bin 3-7

Connecting the Main Power 3-7

Testing the Installation 3-8

TrueBlend SB-2 Batch Hopper Calibration 3-9

Unpacking the Boxes



Upon receiving the shipment, always perform a thorough inspection of the contents and compare it the enclosed packing list. Make sure all parts listed are present and that no visible damage exists.

Inspect all of the equipment in the presence of the freight carrier's representative for damage during shipment. Note any damage on the delivery receipt before signing it. If damage is evident, file a claim immediately against the carrier as it is their responsibility to pay for any damage incurred during shipping. Make sure to include a detailed report of the damage along with photos.

The TrueBlend SB-2 blender arrives wrapped on a skid. The packaging could include (depends on the options selected):

- HMI operator panel
- Control cable (to connect the control to the electrical cabinet).
- Weigh bin
- Slide gate (option)
- User manual and wiring diagrams (not shown)

1 **Carefully unwrap the blender and components** on the skid.

2 **Remove all packing material,** protective paper, tape, and plastic.

⚠ **IMPORTANT:** Do NOT use excessive force. Forces that are exerted on the load cell from outside when attaching and removing the weigh bin load cell may damage the very sensitive load cell.

3 **Carefully remove the mixing chamber.** Use the instructions on the sticker located inside the door of the blender chassis to remove the mixing chamber.

4 **Unbolt the blender from the skid.**

5 **Using the lifting lug provided, lift the unit off of the skid.**

⚠ **IMPORTANT:** Do NOT lift the blender except by using the lifting lug provided. If the weight is unevenly distributed, the mixing unit may tip and injure people when it is lifted.

Preparing for Installation

The TrueBlend SB-2 blender is easy to install if you plan the location and prepare the mounting area properly.

1 Make sure the mounting area provides:

❒ **A grounded power source supplying the voltage and correct current** for your model. Check the blender's serial tag for the correct amps, voltage, phase, and cycles. Any field wiring should be completed by qualified personnel to the planned location for the blender. All electrical wiring should comply with your region's electrical codes.

✎ **Note**: Electrical supply must be a clean power source with nothing else on the circuit (for example self-loading loaders.) The unit must be grounded to a lug by the sensor on the back of the unit.

❒ **Clearance for safe operation and maintenance.**

❒ **A compressed air supply**. It is necessary to supply compressed air to the blender. Your plant system must be capable of supplying at least 0.6 MPa (87 psi) {6.0 bar}.

✎ **Note**: No additional compressed air consumers may be connected to the unit, because this may reduce operating pressure. If the operating pressure is less than 0.6 MPa (87 psi) {6.0 bar} the loading precision may be affected.

Preparing to Mount the Blender

The blender can be mounted on the throat of the processing machine or operated as a centralized mixing station and mounted to an optional stand with a surge bin attached. A frame with reservoir hopper and exhaust box is available if it is used as a centralized mixing station. The frame can be bolted to the floor.

- Make sure that the base is as even as possible.

- Make sure that the switch cabinet and main door are accessible for maintenance work at all times.

- Match the bolt pattern on the bottom of the blender with the mounting surface. And optional adapter is available. It may have been ordered pre-drilled or it may be blank so that it could be custom drilled by you. Mounting interface dimensions are available in this manual on the specification sheets. Match the through hole size on the mounting plate with the appropriate bolt size. You are responsible for the structural integrity of your installation. Make sure to use the largest bolt that will fit properly into the through hole.

Use the hardware supplied to bolt the blender to the stand. (The bolts you should use are attached to the stand.)

Mounting the Blender

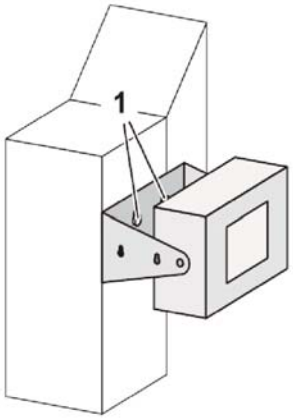
1 **Lift the blender into position.** Using the lifting lug located at the center of the blender, lift the blender (only) into position. This lifting lug was designed to lift the weight of the blender only. Make sure that the blender has the mixing chamber and control removed, that no loaders/receivers are attached, and that there is not any material in the bins.

2 **Reinstall the mixing chamber.** Follow the instructions on the sticker located inside the door on the blender chassis to reinstall the mixing chamber.

✎ **NOTE:** If your mounting surface does not match the standard bolt patterns available, you will need an adapter. You can make an adapter using the dimensions provided or purchase one from Conair. Contact Conair Parts at 1.800.458.1960 From outside the United States, call 814.437.6861

Mounting the Control

1 **Mount the control.** The HMI operator panel can be mounted on the side of the blender chassis or it can be secured to the blender stand or the processing machine. To mount the HMI operator panel on the blender chassis: Match the key hole slots on the blender control with the hex head bolts on the side of the blender. Tighten the hex head screws and tighten the lock nuts inside the blender chassis. The controller with the support can be swiveled by 90° by loosening the rear screw.



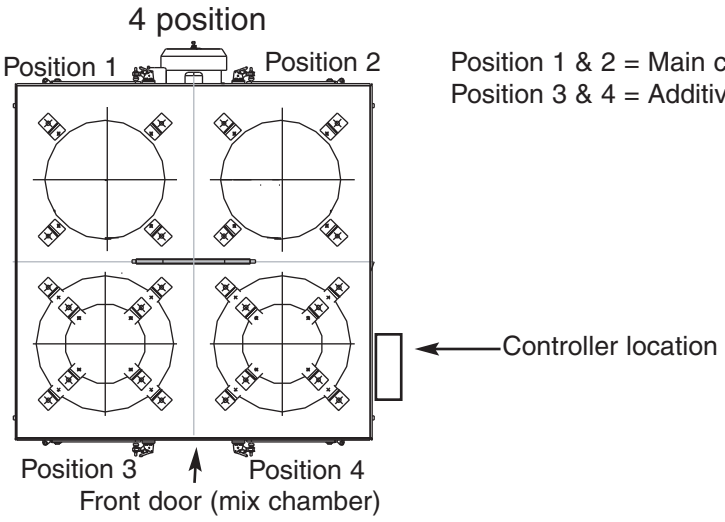
✎ **Note**: If you decide to remote mount the HMI operator panel, you will need to make your own provision to securely mount it. The control can be attached to a wall or another position and connected with a 2 m (standard) or 6 m (optional) cable. The controller can also be placed on a table and prevented from slipping with the four anti-slip feet, which are supplied with the cable.

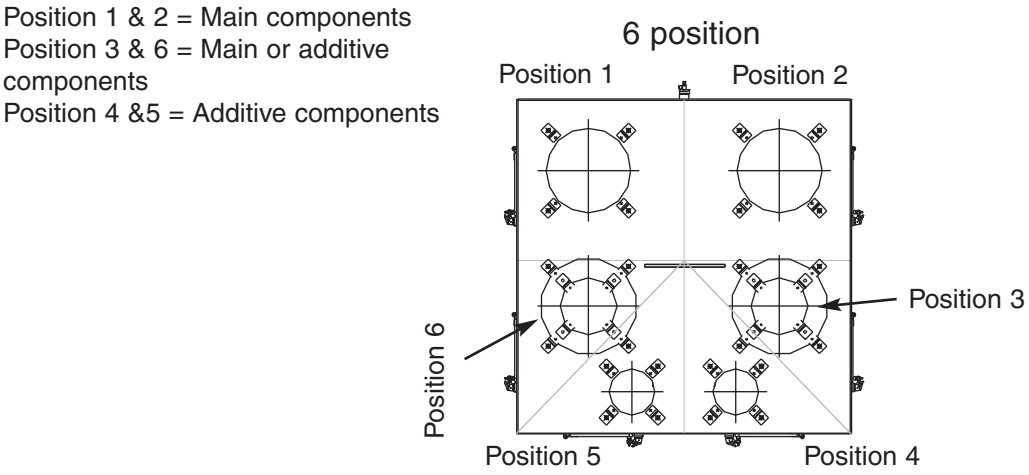
2 **Connect the cable.** Attach the interconnecting DB25 connector cable between the HMI (control) and the electrical cabinet. The cable connects from the back of the box to the fitting underneath the bottom of the electrical cabinet. Tighten the screws on the plug.

Tip: The cable end with the wire exiting from the side should be connected to the touch screen HMI operator panel - to allow the screen to tilt freely.

Tip: Remove the protective film on the touch screen control for optimum performance.

Layout of the Material Hoppers





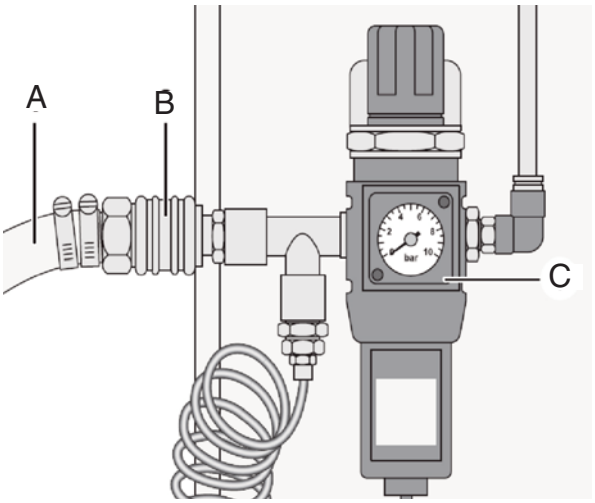
Mounting the Loaders

1. **Install the loaders/receivers onto the blender bins.**
2. **Supply power to the loader as needed.** Refer to the manual the came with your loader for specific instructions.
3. **Supply compressed air to the loader as needed.** Refer to the manual the came with your loader for specific instructions.
4. **Refer to the wiring diagrams** that were shipped with your blender and loaders.

Connecting Compressed Air

1 Connect the air hose [A] to the compressed air connection of the unit [B]. Connect a clean, dry compressed air supply to the compressed air connection on the blender. You will need to supply 1/4 inch male NPT fitting to make the connection. Adjust the regulator to 90 psi.

2 Check the operating pressure with the manometer [C] and if it is different, set it to 0.6 MPa.



Installing the Weigh Bin

1 Visually inspect the pins on the weigh bin and the interfacing parts located on the load cell inside the blender chassis.

2 Guide the pins or hangers (depending on blender model) onto the interfacing part inside the blender.

Connecting the Main Power

The blender operates from standard 120 Volt, 60 Hz or 220 Volt, 50 Hz depending on the option selected when purchased. You can confirm power requirements by looking at the serial tag.

1 Plug the blender into a properly sized electrical outlet.

NOTE: Blenders ordered with 220 Volt will need to be wired to a disconnect that is protected by properly sized protectors (fuses or breaker).

CAUTION: Always disconnect and lock out the main power sources before making electrical connections. Electrical connections should be made only by qualified personnel.

IMPORTANT: Always refer to the wiring diagrams that came with your blender to locate specific electrical components. Illustrations in the User Guide are intended to be representative only.

Preparing for Electrical Installation

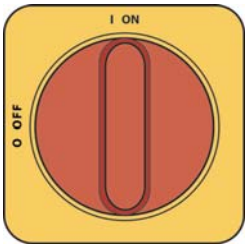
1. **The operator touch screen for the TrueBlend SB-2 system should be conveniently located for easy operator status.**

2. **Each component has been prewired at the factory, so only the wiring required to interconnect all of the components must be performed in the field.**

3. **See the electrical drawings supplied with the system for exact connections required.**

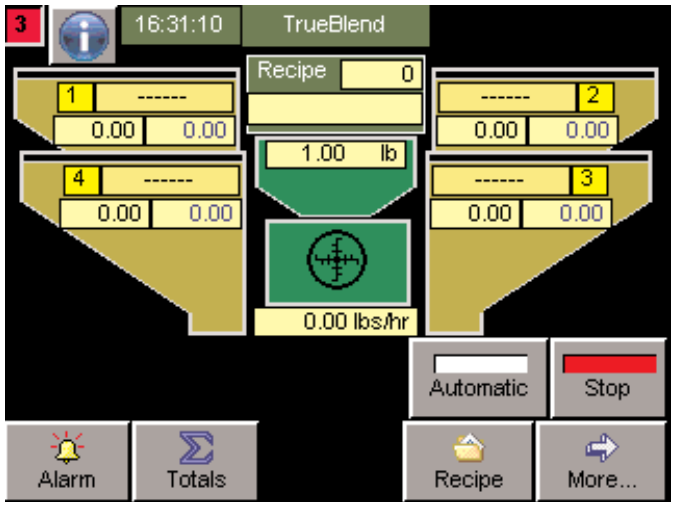
Testing the installation

You have completed the installation. Now it's time to make sure everything works.



1. **Make sure there is no material in the bender.** If you have mounted loaders on the blender, disconnect the material inlet hose at the source.

2. **Turn on the main power to the blender.** Make sure the blender's disconnect dial is in the ON position. This powers up the control and the display lights will illuminate.



System Configuration

The TrueBlend SB-2 system is a highly flexible and user configurable system. As such, it has the ability to store a significant amount of data to completely describe your particular process application and set-up. This system configuration data only needs to be entered once as it is stored in battery backed memory. In addition, some of the configuration variables have default values which in most cases do not need to be changed. A configuration worksheet has been provided in this manual (Appendix A) that can be filled-out so a written log of the system configuration can be saved. Section 4 of this manual describes in detail all of the parameters which can be configured. *See the Operation section entitled, Menus-System Setup* of this manual.

TrueBlend SB-2 Batch Hopper Calibration

1 **Turn power on to the blender. Once the controller display comes on and the blender overview screen is displayed, continue with the calibration.**

2 **Press the Setup button on the touch screen.** The TrueBlend SB-2 setup screen will appear.

3 **Press the Batch Hopper button, located at the right side of the screen.** The next screen to appear will be the Set up screen for the batch hopper.

4 **Press the Calibrate button.**

5 **Press the Manual Calibrate button.** It is a good idea to re-calibrate the unit after it has been transported and mounted. Re-calibrating the unit assures that the start weight on the scale inside the blender is zero.

Tip: The weigh bin must be in place, and empty, when you perform this task. If the bin is not in place, the calibration will be inaccurate and will need to be redone.

6 **Press the 'OK' button to obtain the Zero Weight Calibration Factor.** Please stand by, while the system obtains the Zero Weight Calibration Factor.

7 **Enter the Test Weight Value, then press 'OK'.**

8 **Place the test weight into the hopper and press 'OK' to continue with the calibration.**

9 **Stand by while the system obtains the Test Weight AD Value.**

10 **Remove the test weight from the hopper.**

11 **Press the Home button to return to the Home screen.**

SECTION
4

Operation

The TrueBlend SB-2 Operator Control Panel 4-2

Loading Material into the TrueBlend SB-2 Hoppers . 4-3

Starting the Blending Process 4-3

Stopping the Blending Process. 4-3

Security Settings. 4-3

Licensing 4-4

Menus 4-4

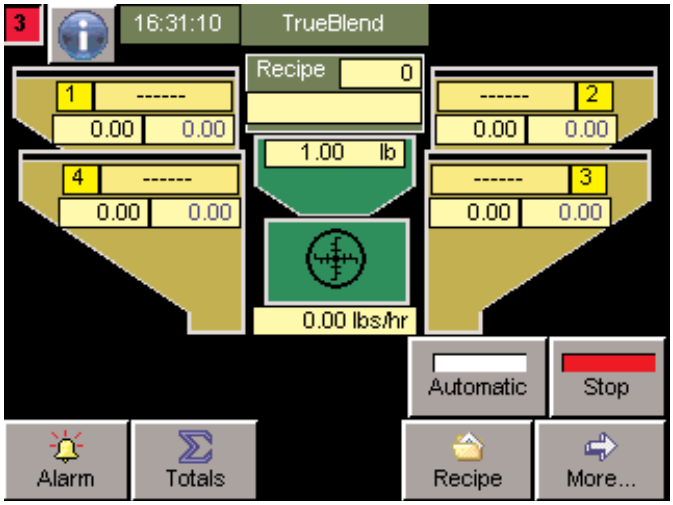
- Home. 4-11
- Reports 4-13
- Security 4-19
- Alarms 4-21
- Totals 4-23
- Recipes 4-25
- Loading (Optional) 4-31
- Setup. 4-31
- Diagnostics. 4-64
- Manual Control 4-67
- Trending. 4-68

Checking Emergency Stop Function 4-77

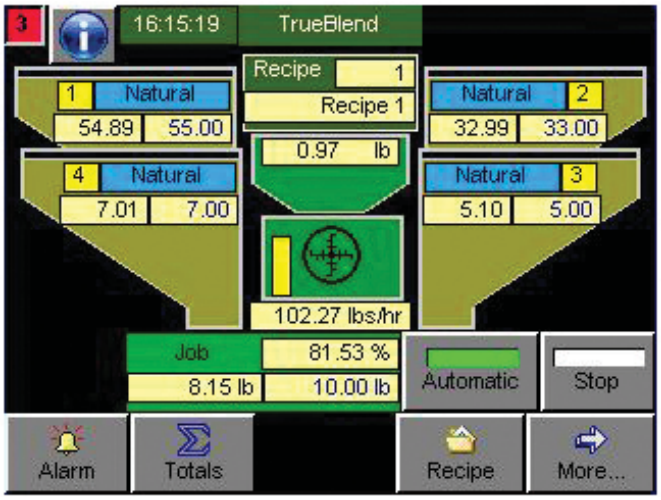
Changing Material in a Blender Component. 4-78

Cleaning Mixing Chamber and Hopper 4-80

The TrueBlend SB-2 Operator Control Panel



Home Screen - This is the home screen for the blender.



Home Screen - This is the home screen with Batch Mode turned on.

Loading Material into the TrueBlend SB-2

Before the blender can be operated, material must be loaded into the TrueBlend SB-2 material hoppers.

Starting the Blending Process

1 **Turn power on to the blender.** The controller display will come on and the blender Home screen will be displayed.

2 **Press the 'Recipe' button. The TrueBlend SB-2 Recipe screen will appear.**

3 **Enter the recipe percentages for each ingredient.**

4 **Press the 'Options' button and select the material type for each component.**

5 **Press the 'Automatic' button to start the blending process automatically with the new set recipe values and Options.** *See the Operation section entitled, Menus-Recipes* for more detailed information.

Stopping the Blending Process

1 **Press the button 'Stop' to stop the metering and mixing process.** The current batch will run until it is finished, unless the operator chooses the button to stop immediately. When finished the 'Automatic' display changes to 'Stop'.

Security Settings

Security levels dictate what data is accessible by the user. On each screen page in the upper left corner, a numeric box indicates the current level of security.

The security number level, color, and default passcodes are as follows:

- 0 – Green - Guest – minimum security level
- 1 – Yellow - Operator – Passcode 3333
- 2 – Orange - Setup – Passcode 2222
- 3 – Red - Service – maximum security level - Passcode 1111

The passcodes for each level can be changed in the 'Setup' – 'Panel' – 'Security' screen. *Refer to the Operation section entitled, Menus-Security* for more information regarding user-defined passcodes and setting up the security system.

Menus

Licensing
The software on the Compact Flash (CF) card requires a license in order to boot the system to the 'Home' page. The license is generated from the 'Station Identifier' of the touch screen unit. Removing the CF card and installing it into another touch screen system will trigger the license to be invalid and the system will not complete the boot sequence. If the license is invalid, the user is presented with an invalid license popup window. Contact Conair support to obtain a new license.

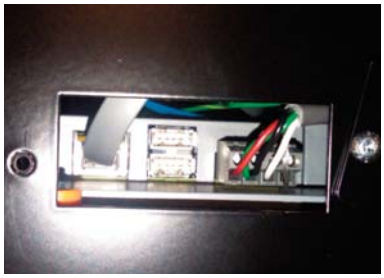
Quick Setup
For an initial setup, a 'Quick Setup' procedure is available. This is an intelligent process where the user is asked a series of questions that will configure the system. The two basic steps in this procedure are: configuring the basic system and extruder/weigh hopper configurations.

To start the 'Quick Setup' procedure, first navigate to the 'Home' page. At the 'Home' page press the 'More' button. Press the button labeled 'Setup' followed by more button, then the 'Quick Setup' button.

Hardware
This section outlines some of the details of the PLC Hardware.

Battery
The TrueBlend SB-2 touch screen uses battery backed memory to store a variety of control and status data. If the battery drains to a low voltage, a system alarm will occur to inform the user. If the battery is drained and power to the system is removed, the data stored in battery backed memory will be lost. To avoid this, once the alarm is occurring, replace the battery with system power applied. The battery is Conair Part Number 2671080303.

This battery is replaced by removing the battery cover and pulling on the plastic tab to extract. Take care when inserting the battery that the plastic strip is around the battery so that it can be removed in the future. Replace the cover.



USB
There are two USB ports on the back side of the main touch screen unit. Remove the access panel door on the back of the control to gain access to the USB ports. The USB port that is closest to the touch screen front is labeled USB2. The USB port closest to the back of the PP045 (farthest from the touch screen front) is labeled USB1.
Either of these USB ports accepts a standard formatted USB thumb drive. This is useful for saving a variety of system parameters as well as report generation. Files that can be saved are system configuration, recipes, and resins. All reports can be formatted as text files and placed on a USB thumb drive as well.

A printer with a USB interface can be connected to USB1. This allows for printing of reports directly to the printer. This print function only works as a text printer. No graphics, trends, or screen shots can be printed.

✎ **NOTE:** The printer should be plugged in before the system is turned on in order for the touch screen to recognize the attached printer.

(Continued)

Menus (continued)

A standard PS-2 keyboard can be connected to USB2. All 3D buttons in the system are mapped to buttons on the keyboard. Mouse entry takes the place of screen touches. For data entry the keyboard is fully functional. Mouse touch the input field and then use the PS-2 keyboard for the data entry. Pressing 'ENTER' will accept the data into the input box.

User Interface

The user interface, presented on the touch screen, is a collection of pages or screens which can be used to monitor and control the system. The TrueBlend SB-2 system is designed to work with a variety of configurations and applications. As a result, screen pages will vary, depending upon the configuration of the system.

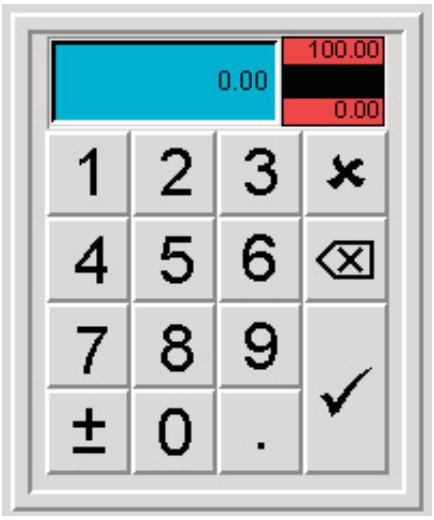
General Concepts

Useful concepts for operating the TrueBlend SB-2 system.

- All user interaction is through the touch screen display. Navigation is processed via pressing raised 3D-shaped buttons. Pressing a 'button' will appear to indent the button indicating a button press.
- Numeric and character entry is performed by touching an 'input' box, which reveals an alpha/numeric keypad. An input repeat feature occurs, if a character is pressed and held.
- The Numeric only keypad will display the minimum/maximum values allowed for the particular data field to be edited. If data is entered outside the listed range, the data will reset to the range limit nearest the entered data value.
- Parameters for display only will be presented within a box with a light yellow background. A value represented with black text is an 'Actual' value learned by the system. A value represented with blue text, is a value 'Set' by the user.
- Boxes that allow user input, have a 'picture frame' border around a dark blue box with white text.
- The currently selected input box will have a 'picture frame' border around a light blue box with black text.
- Boxes that are currently 'locked' will have a 'picture frame' border around a dark brown box with white text.
- When inputting a numerical field, the keypad will indicate the minimum and maximum values of the field next to the displayed value. The minimum number is on the bottom with the maximum number on the top.
- The left most button in the navigation bar is an 'Alarms' button. Pressing this button on any screen of the system will immediately display the active alarms screen. Pressing the 'Back' button on the alarms screen will return the screen displayed, before going to the alarms screen.
- The 'Alarm' button will change color to reflect the severity of the most severe active alarm in the system.
- Recipes are numbered from 1 to 1000.
- Resins are numbered 1 to 250.

(Continued)

Menus (continued)



Keypad, Number Only

Keypad, Alpha, Numbers

(Continued)

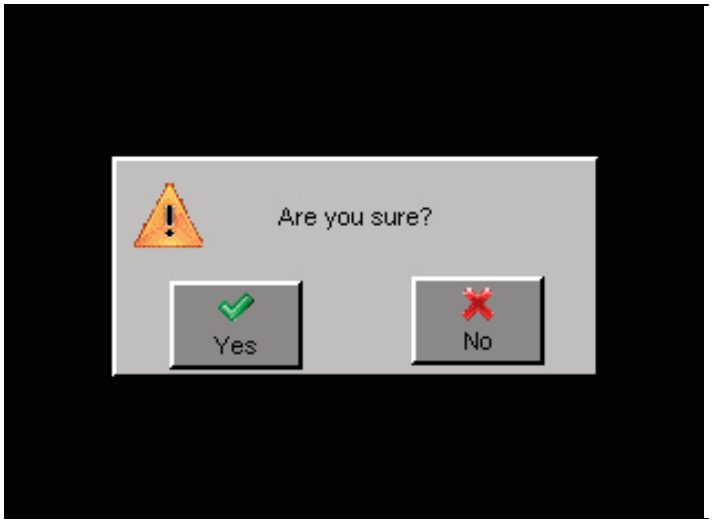
Menus (continued)

Keypad, Alpha 1 Screen

Keypad, Alpha 2 Screen

(Continued)

Menus (continued)



Popup, Are you sure? Screen

Navigation

Screen navigation is accomplished by pressing buttons visible on the command bars shown at the bottom or right hand sides of the screen. Each button appears as a raised area and is represented with an icon and name. When the button is pressed it will change color and appear to be depressed. Note that on some screens it may not be possible to show all navigation buttons at the same time. In these cases, the lower right hand side of the screen will show a 'More' button which will scroll through additional navigation buttons.

An example of the horizontal command bar is as follows:

Command Bar

The buttons present on the command bars will change based on which page is currently being shown. Navigation buttons with identical function are located in the same place on numerous pages.

Note that if the button appears as dark brown then that button will not function, indicating the current security level is not high enough or the system operating state prohibits this action. *Refer to the Operation section entitled, Menus-Security* for more information.

(Continued)

Menus (continued)

Basic navigation Buttons

There are several navigation buttons that are not specific to any page. The following section outlines these buttons.

More – This button is used to scroll through the various navigation buttons on the screen. Either or both the vertical and horizontal navigation bars may change when this button is pressed.

Alarm – This button is used to change the current screen to the 'Active Alarms' screen. This button will also change color to reflect the level of the alarm highest active alarm. *Refer to the Operation section entitled, Menus-Alarms* for detailed descriptions and alarms processing.

Home – This button is used to return to the main screen of the system.

Back – This button is used to return to the screen previously shown to the current screen.

Advanced – This button is predominantly used in 'Setup' to access more advanced settings.

Close – This button will close the current screen/popup and return to the previous screen.

Increase – Increase the value in the input box or go to the next device.

Decrease – Decrease the value in the input box or go to the previous device.

Page Up – Page/Screen up. Go up to the next screen containing more parameters / device data.

Page Down – Page/Screen down. Go down to the next screen containing more parameters / device data.

Yes – Affirmative response to question, perform the action.

No – Negative response to question, cancel the action.

(Continued)

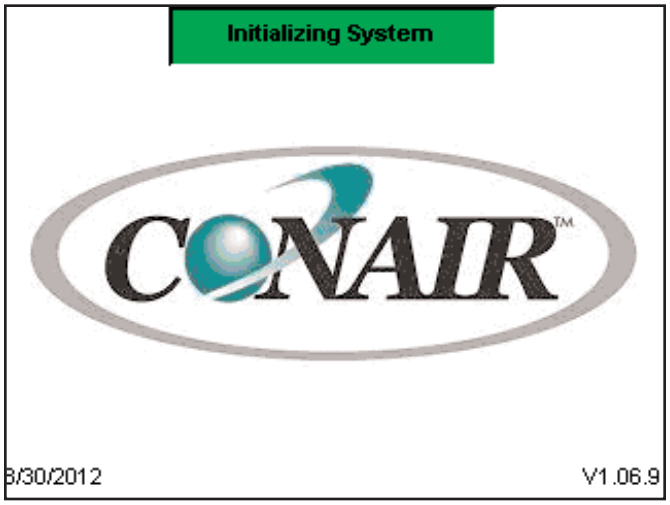
Menus (continued)

Initial Page

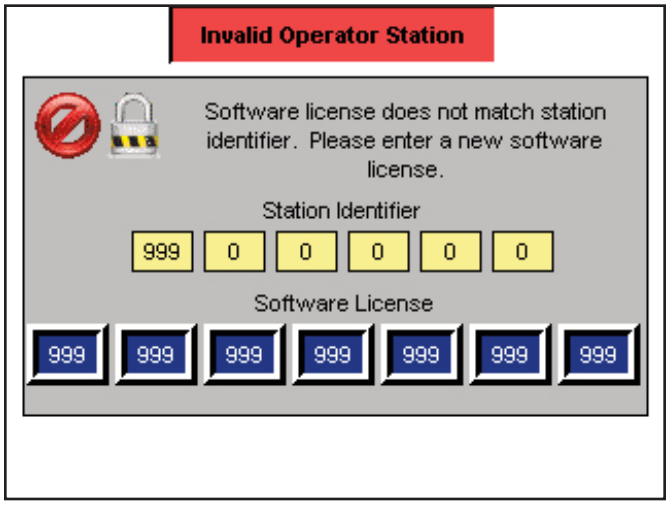
When the system is first powered on, the touch screen will go through the manufacturer's boot up process. Upon completion, the TrueBlend SB-2 code will display the 'Initializing System' screen, indicating the software is loading the configuration of the system setting the initial operating parameters. Do not turn off power during the time this page is shown. In the lower right hand corner of the screen, the current Software Version is displayed.

Contact Conair Parts
1 800 458 1960
From outside of the United States, call:
814 437 6861

There is firmware protection built into the system. Powering the system on for the first time with new software requires a 'software licensing' code to be entered in order to continue the boot process. For new installations, this will have been completed by Conair before shipment. Contact Conair technical support if the system does not boot.



Initial Page



Initial Page, License Entry

Menus-Home

Home

The buttons present on the command bars will change based on the page being displayed. Navigation buttons with identical function are located in the same place or will vary based on the application, control modes, and recipe entry method selected. For this reason, not all representations of this screen will be shown here, but the functionality of all these screen variations will be discussed.

Across the bottom of the screen is a typical command bar. The most common functions needed to run and monitor the line will be on this command bar. The lower right of the screen shows two buttons, Automatic and Stop. These buttons will control the state of the blender. On these buttons is an indicator showing the current operating state. The possible data shown on the screen includes the current system throughput, the current job name, and the name of the current production recipe.

The blender Home page also shows for each hopper the material type in the hopper, the set and actual target values for the hopper, as well as an indicator that show the hopper is currently feeding. The batch hopper has indications for batch weight, alarming, and gate open. The mixer has indications for mixer proximity sensor, mixer alarm, and mixer turning.

In 'Job Mode' the blender will run producing a blend for a set amount of material and then stop. The 'Job Mode' indicator box shows the set and actual batch totals as well as the percent completion. Pressing this box the user will be taken to a screen where 'Job Mode' may be disabled or the target weight can be edited. If this box is not being show, 'Job Mode' has been disabled. To Re-enable 'Job Mode' go to the blender recipe and press 'Job Mode'.

Automatic – Places the Blender into automatic operation. Requires valid recipe entry from the Recipe button. The button will show a green indicator if in automatic.

Stop – This button is used to put 'only' the blender into a stopped state. The button will show a red indicator if stopped.

Totals – Navigate to the material throughput totals screen.

Monitor – Navigate to the Monitor Detail screen.

Recipe – Navigate to the recipe entry screen.

(Continued)

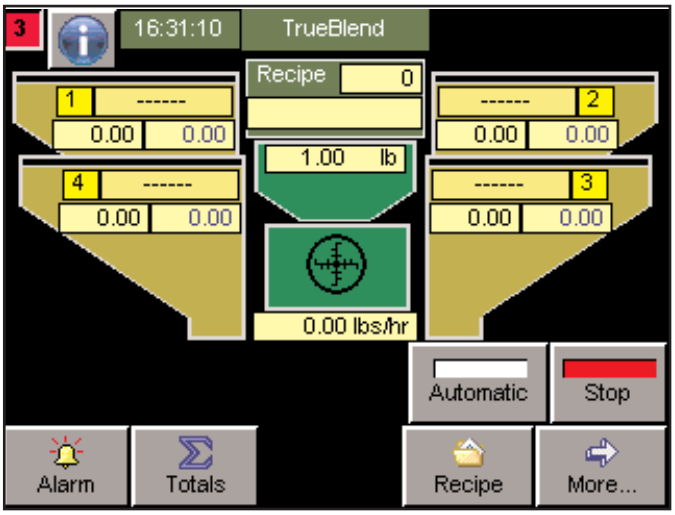
Menus-Home (continued)

Security – Navigate to the security passcode entry screen.

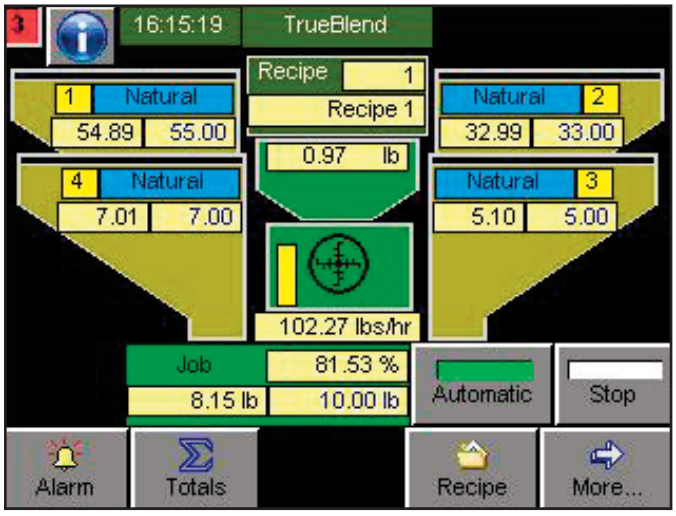
Setup – Navigate to the setup screens.

Report – Navigate to the report generation screen.

Language – Navigate to the language screen to change display languages.ing more parameters / device data.



Home, Blender



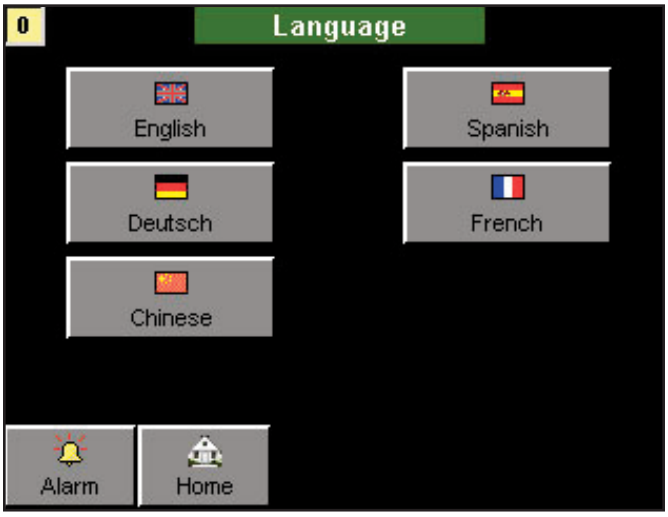
Home, With Job Mode On

(Continued)

Menus-Home (continued)

Languages
The touch screen system supports a variety of languages. The default display language is English. This can be changed in the setup by either navigating to 'Setup' – 'Panel' – 'Language'. This will change the default display language. It is also possible to change the display language without going into 'Setup'. This will 'temporarily' change the displayed language until the next reboot or until the user selects a new language.

To navigate to the 'Language' screen, first navigate to the 'Home' page. At the 'Home' page press the 'More' button. Press the button labeled 'Language' to display the 'Language' screen. The Language screen has a button for each language supported. Press the button for the desired language. The display will now use the selected language.



Language Screen

Menus-Reports

Reports
From the 'Reports' screen it is possible to create a variety of reports and output the report to either a USB connected printer, or to a USB thumb drive. The thumb drive can be on either USB port 1 or 2 and the printer must be plugged into USB port 1 (Farthest away from back of panel).

NOTE: The printer should be plugged in before the system is turned on in order to properly recognize the printer as attached

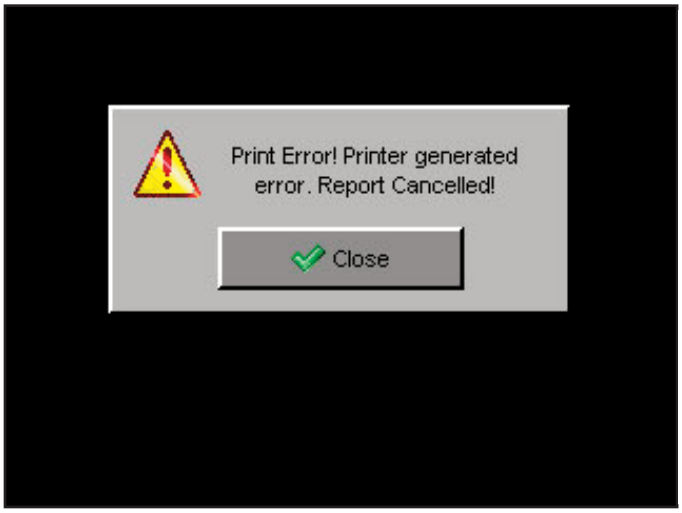
When the 'OK' button is pressed, the report will be generated. A pop-up screen will appear with a progress bar. Once the progress bar pop-up vanishes and the report screen is visible, the report is complete. Should an error occur during the process, a pop-up will be presented, indicating either 'a general printer/report error' or 'an out of paper error'.

(Continued)

Menus-Reports (continued)

OK - Execute the selected report to the selected destination.

Reports



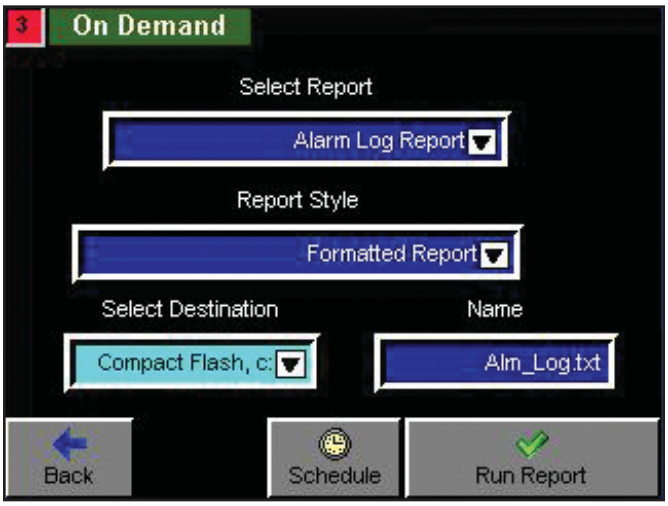
Reports, Error

(Continued)

Menus-Reports (continued)

On Demand

Parameter	Min/Max	Description
Select Report	Alarm Log Report Active Alarms Report Current Status Report Shift Inventory Report Total Inventory Report Recipe Report Resin Report	Select the type of report you wish to generate.
Report Style	Formatted Report Comma Separated Data File	Select the style of report you wish to generate
Select Destination	USB 1 USB 2 Telnet	Select the destination where the report should go.
Name	Alm_Log.txt	Default report name. Press field to edit name.



Reports On Demand

Alarm Log Report

This report will output the entire list of historical alarms. This list contains a maximum of 200 entries. Whenever an alarm is activated, cleared, or acknowledged, an entry in this table is created. For each entry the following data is shown:

- The time of the event.
- State of the alarm.
- The acknowledged status of the alarm.
- The alarm message.

(Continued)

Menus-Reports (continued)

Active Alarm Report
This report will output the entire list of current active alarms. For active alarms, only the current state is listed. For non-current alarms, each is updated with the new status. Each alarm will remain on the list until the alarm is cleared and acknowledged.

- The time of the event.
- State of the alarm.
- The acknowledged status of the alarm.
- The alarm message.

Current Status Report
This report prints out the current status of the system. First, the job name, if available, is printed. This is followed by the current recipe. The recipe values printed, match those entered at the recipe screen page. In addition to the set values, the actual values are printed. This is followed by the inventory and shift totals. For the shift totals, the percentage of the shift totals is also calculated.

✎ **NOTE:** This report only prints out the recipe data at the time of the report.

This report may also be generated as an automated report. In this case, it is only sent to the printer. It is also possible to automatically clear the shift totals after this report is printed. The system must be 'ON' during the shift change time in order for the totals to be cleared, otherwise the system will not clear them.

Shift Inventory Report
This report shows the current shift totals and the percentage of each ingredient as consumed over the shift. Note that if the shift totals are not cleared at the beginning of the shift then these values will be added to the prior shift totals.

Total Inventory Report
This report shows the current inventory totals and the percentage of each ingredient consumed since the last time the inventory totals were cleared.

Recipe Report
This report shows the total amount of material usage consumed since the job has been started for each ingredient of the current recipe being run.

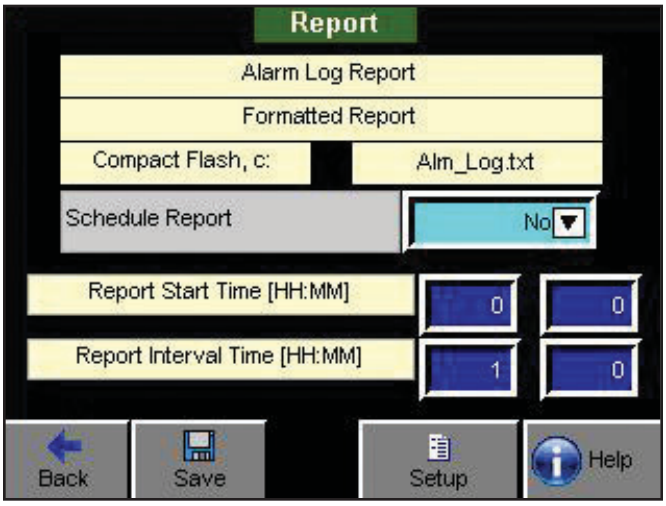
Resin Report
This report shows the total amount of material usage for each resin name. Requires Resin names to be enabled, and resin names to be stored in 'Recipe Book".

(Continued)

Menus-Reports (continued)

Report Schedule

Parameter	Min/Max	Description
Schedule Destination	Compact Flash USB 1 USB 2	Select the destination where the report should go.
Batch Report	OFF or ON	Select ON to begin logging batch data to the report destination.
Recipe Report	OFF or ON	Select ON to begin logging Recipe data to the report destination.
Save	Save Settings	Press Save to save these settings.



Reports Schedule

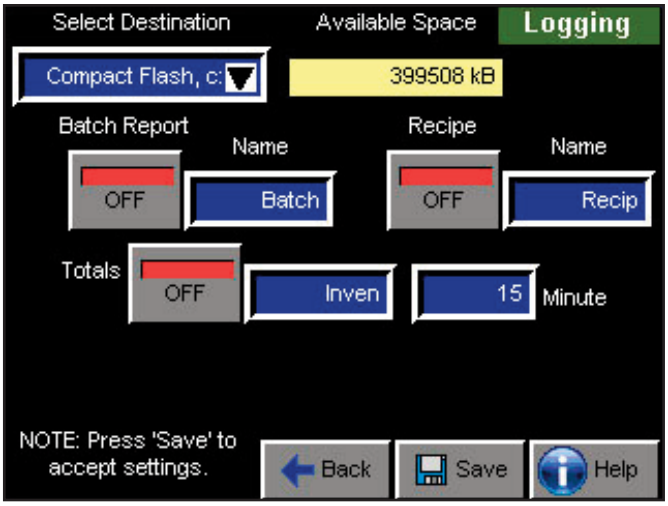
Automated report generation is possible with a summary/status report. This report can be sent to a printer, on a periodic basis, but to the printer ONLY. It is intended for this report to be printed at shift change, in order to report the shift inventory totals. However, this report can be printed on any periodic interval. The setup for this process requires FIRST for the proper time to be entered into the touch screen in the 'Setup – Panel – Date' advanced page.

Logging

Parameter	Min/Max	Description
Select Destination	Compact Flash USB 1 USB 2	Select the destination where the report should go.
Batch Report	OFF or ON	Select ON to begin logging batch data to the report destination.
Recipe Report	OFF or ON	Select ON to begin logging Recipe data to the report destination.
Totals Report	OFF or ON	Select ON to begin logging Totals data to the report destination.
Save	Save Settings	Press Save to save these settings.
Setup	Setup start time	Press to set time to begin report.

(Continued)

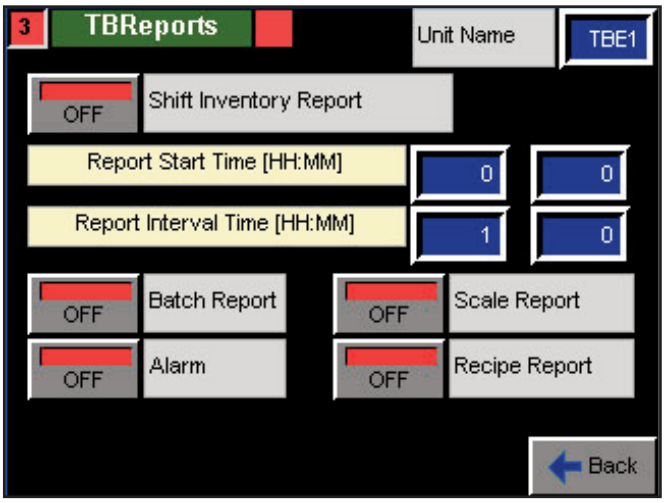
Menus-Reports (continued)



Reports Logging

TB Reports – TrueBlend Reports Software Required

Parameter	Min/Max	Description
Shift Inventory Report	OFF or ON	Select ON to output data to TB Reports.
Batch Report	OFF or ON	Select ON to output batch data to TB Reports.
Scale Report	OFF or ON	Select ON to output Scale data to TB Reports.
Alarm Report	OFF or ON	Select ON to output Alarm data to TB Reports.
Recipe Report	OFF or ON	Select ON to begin logging Recipe data to the report destination.



TrueBlend Reports

Menus-Security

Security

Security levels dictate what data is accessible by the user. If the current security level is not high enough to perform a certain function, then the input box or button will be dark brown in color. Touching the input box or button while it is 'locked' will change the screen to show a 'popup', indicating an invalid action. The user must either enter a passcode, or close the popup and return to the present screen.

✎ **NOTE:** In some cases, the system operating state will lock the input box or button. In this case a different popup will appear informing the user that the system must be 'Stopped' before performing the desired action. Upon closing this popup, the user will be returned to the present screen view.

On each screen page in the upper left corner, a numeric box indicates the current level of security. The security level is indicated by a number as well as color code.
The security number level, color, and default passcodes are as follows:

- 0 – Green - Guest – minimum security level
- 1 – Yellow - Operator – Passcode 3333
- 2 – Orange - Setup – Passcode 2222
- 3 – Red - Service – - maximum security level, Passcode 1111

The passcodes for each level can be changed in the 'Setup' – 'Panel' – 'Security' screen. *Refer to the Operation section entitled, Menus-System Setup-Security* for more information regarding user-defined passcodes and setting up the security system.

Also available with the security system is an 'Auto Logout' feature. If the 'Auto Logout Timeout' value is set to a value other than 0, then after the set timeout value has elapsed, the current security level number will be set to the minimum level (Guest).

Security Screen

To navigate to the 'Security' screen, first navigate to the 'Home' page. At the 'Home' page press the 'More' button. Press the button labeled 'Security' to access the 'Security' screen. The security screen displays the current security level and an input box to enter a passcode. After entering a passcode, a popup will appear indicating acceptance of the passcode. This popup is presented for 3 seconds and disappears. After the popup disappears, navigation back to the 'Home' page or to the 'Alarms' page is possible.

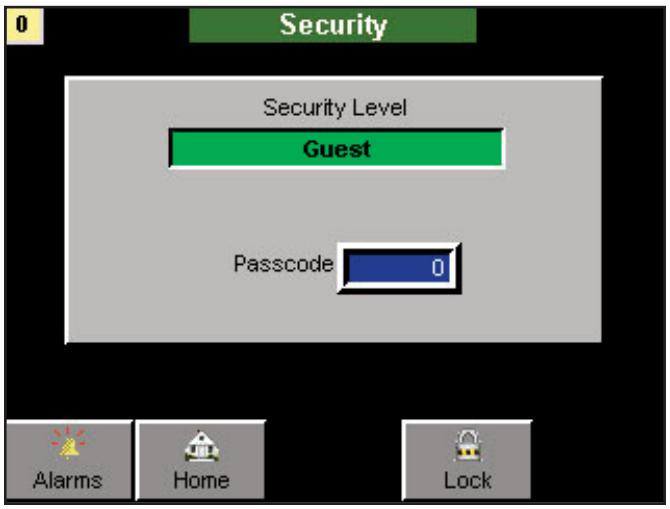
✎ **NOTE:** If the passcode entered is invalid, the security level will be set to the minimum level.

The navigation bar on the Security screen also shows a 'Lock' button. This button is a quick method to return the system to the minimum security level. Pressing the 'Lock' button sets the security level to the minimum value, without entering a passcode.

Lock – Set the security level to the minimum value without entering a passcode.

(Continued)

Menus-Security (continued)



Security Screen

Security, Invalid Input Entry

Menus-Alarms

Alarms

The TrueBlend SB-2 system contains alarms for each device in the system. There are three levels of alarm severity, Information, General, and Shutdown. A single alarm may have a different severity level based on which operating state the system is in. For example an empty hopper alarm may be a General alarm when the system is stopped but it is a Shutdown alarm if the system is running. Each alarm type and the severity assigned can be viewed and edited in setup. To navigate to the Alarms Setup section from the 'Home' screen, press 'More' - 'Setup' – 'System' – 'Alarms'.

The last 100 alarms are logged to the system and even after a reboot sequence, are available for viewing. This log can be cleared by the user. The logged alarm list has additional entries, indicating when the alarm became inactive, as well as when each alarm was acknowledged.

The active alarm list can be reached by pressing the 'Alarm' button on any screen of the system. The 'Alarm' button is color coded to reflect the worst severity active alarm.

Alarm severity color codes are as follows:

Alarm Severity	Color	Description
Information Alarm	Green	This alarm severity indicates a non-critical condition which should soon be resolved.
General Alarm	Yellow	This alarm severity indicates a serious condition that needs immediate attention.
Shutdown Alarm	Red	This alarm severity indicates a critical condition & caused the line to shut down - requires immediate attention.

Ack – Acknowledges alarms in the active alarm list. If the alarm is 'inactive' then it will be cleared from the list

Log – Navigate to the logged alarm page.

Clear – Clear the logged alarm list of all entries.

Report – Send the logged alarm list to an output device such as a printer or USB thumb drive.

(Continued)

Menus-Alarms (continued)

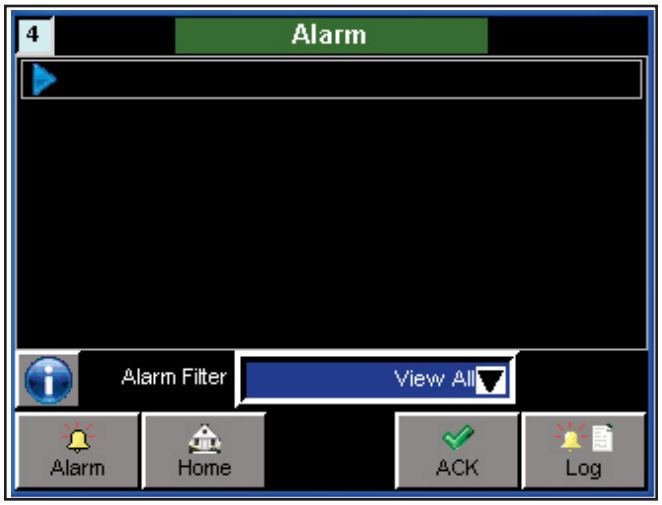
For each alarm in the alarm list, information fully describes the alarm state and time of occurrence. Each alarm is color coded to indicate its severity.

Column	Description
Severity	1 = Information, Green 2 = General, Yellow 3 = Shutdown, Red
Time	The time the alarm occurred.
Alarm State	Active – The alarm is occurring currently Inactive – The alarm is no longer occurring.
Acknowledge State	An indication if the alarm has been acknowledged. **NOTE:** The alarm may still be active and be acknowledged.
Description	A descriptive text of the device and the alarm.

In the lower center of the screen is an 'Alarm Filter' pull-down menu. With this filter the user can select to show, all alarms, General/Shutdown alarms only, or Shutdown alarms only.

If the number of alarms exceeds a single screen, touching the alarm list displays a scroll keypad to allow scrolling of the list.

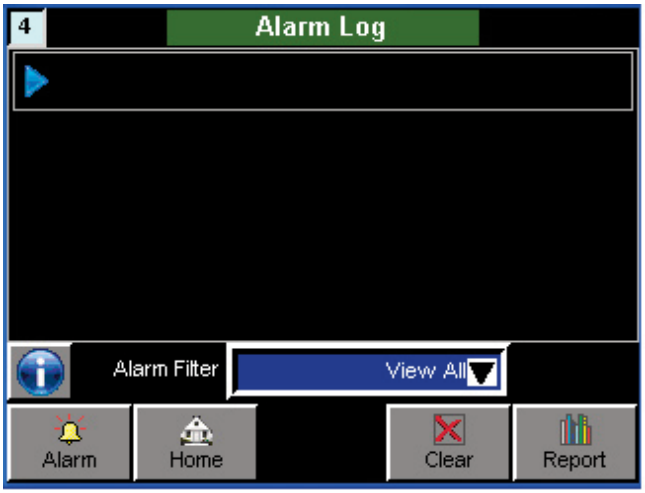
Alarms, Scroll Keypad



Alarms, Active

(Continued)

Menus-Alarms (continued)



Alarms, Logged

Menus-Totals

Totals

The totals screen displays the recipe, resin, system and device inventories. To access the totals screen from the 'Home' screen, press the 'Totals' button. Two types of material consumption totals are accumulated in the system. The first is the running total labeled 'Total Inventory'. The second is called 'Shift Totals'. This allows users to track material usage during a shift. Separate buttons are provided for clearing the two total types.

Like other screens in the system, the totals screens can vary based on the system configuration. If resin names have been enabled then a button on the command bar will change the page to allow named resin totals to be viewed.

For resin and recipe totals, the page displays the recipe/resin name, number, and total. An individual recipe/resin total can be viewed by directly keying in the number of the recipe/resin in the table, or by pressing the 'Up/Down' buttons to scroll through the table of resin names, until the desired resin total is reached. Holding down these buttons will scroll the available values. Single presses will increment/decrement the resin number by 1.

Also displayed on the totals pages are buttons to 'Clear' the totals. Clearing totals requires a higher security level. Separate 'Clear' buttons are provided for clearing inventory or shift totals. When one of these buttons is pressed the screen displays the time and value of the last five totals that were cleared. A confirmation box with 'yes'/'no' buttons is present to confirm the clearing operation. The totals will not be cleared until 'yes' is pressed. At that time the current totals will be cleared and the recent totals list will be updated. The oldest total will drop off the list.

For clearing recipe and resin totals, a confirmation popup will appear. Pressing 'yes' will clear the totals. There is no history for these totals. With these totals it is possible to clear an individual recipe/resin entry total or the entire table. The total shown on the page will be the individual total that is cleared.

(Continued)

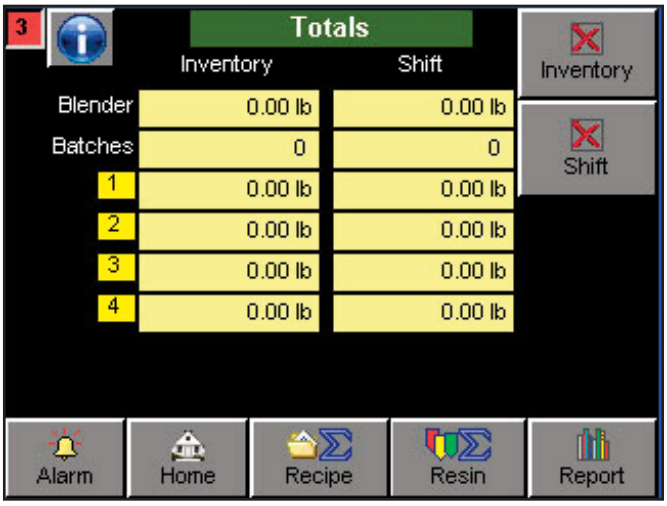
Menus-Totals (continued)

Inventory – Clear the inventory totals.

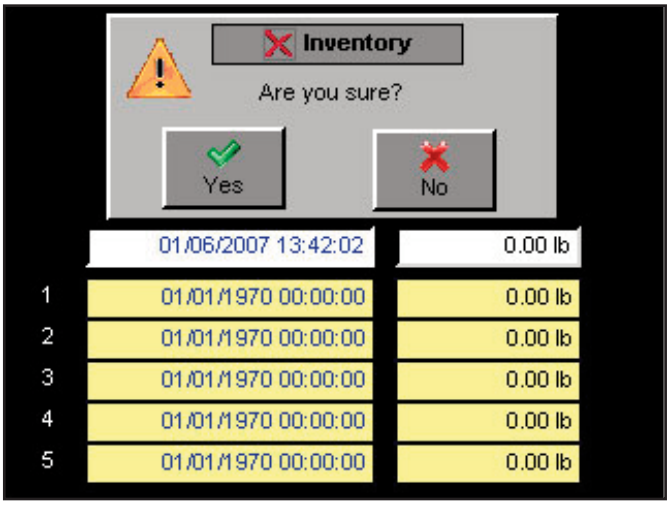
Shift – Clear the shift totals.

Recipe Totals – Navigate to the totals page to display inventory totals for recipes.

Resin Totals – Navigate to the totals page to display inventory totals for resins.



Totals



Totals, Clear Shift/Inventory

(Continued)

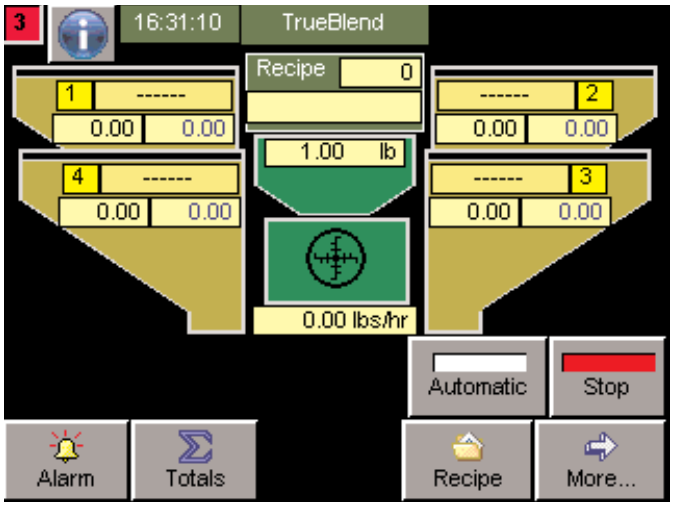
Menus-Totals (continued)

Monitor – Home Screen
A Home screen provides a detailed view of the system status. This monitor information is shown on the 'Home' screen.

The displayed data includes the current operating state (Automatic or Stop), the recipe name and number, the current recipe set points (shown in blue), the current recipe actual values (shown in black), each components material type (Natural, Regrind, Additive Natural, or Additive Batch), the current batch hopper weight in lbs (kg), and the estimated usage rate in lbs/hr (kg/hr).

To indicate the 'Open' status of each component valve, the batch hopper dump valve, or the mixer dump valve, the symbol is displayed.

To indicate the 'On' status of mixer agitator, the symbol is displayed.
To indicate the 'Covered' status of the mixer proximity switch, the symbol is displayed.



Home, Blender

Menus-Recipes

Recipe
The recipe screen is provided to enter the target set values or 'Recipe' for the system's automatic operational state. These pages are highly dynamic and depend upon the configuration chosen during 'Setup'. All variations will not be shown here.

Whenever the user edits the 'New' recipe values, a temporary recipe is being edited. It is not being used to control the system. The system will control the blender according to the 'New' recipe values, only after the 'Automatic' button is pressed. This copies the recipe from the 'New Recipe' to the 'Current Recipe'. When 'Automatic' is pressed, the 'New Recipe' is checked for problems. If there are no problems with the Recipe, the recipe will be copied to the 'Current Recipe' and the system will control the blender accordingly. If there is a problem with the recipe, an orange recipe 'Error' button will appear on the screen. Pressing this 'Error" button will display a list of problems with the recipe.

(Continued)

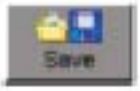
Menus-Recipes (continued)

For a blender there is a recipe options page. On this page the component feed order can be set (if configured) as well as the type of material in the hopper (Natural, Regrind, Additive Natural, Additive Batch). Note: Additive Natural and Additive Batch only appear as choices if the Injection Recipe Entry mode is set. To set it, go to Setup/System/Recipe, and select the recipe entry method.

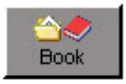
It is possible to set the blender to process a certain amount of material and then stop, this is called 'Job Mode'. This mode is first enabled from the blender recipe screen, press 'Job' –to show the setup screen. Enable 'Job Mode' by pressing the 'On' button. Set the 'Target Weight' to the amount of material that should be mixed. Press the 'Clear' button to reset the 'Current Weight' field. Now when 'Auto' is pressed, the blender will generate the target weight of material and stop. The blender can be stopped and restarted and the current weight field will be maintained so that the right amount of material in the batch is generated. The blender Home page will also show the status of the 'Job Mode'.

The 'Recipe Book' contains any stored recipes. In the 'Recipe Book', recipes can be edited or viewed without affecting the current running recipe. The proper security level must be met in order to store recipes/resins, or edit recipes/resins in the recipe book.

Select – Select the displayed resin or recipe.



Save – Save the current production recipe or the recipe currently shown in the recipe book.



Recipe Book – Navigation to the screens where the stored recipes are viewed and edited.

Edit Recipe – Edit the current recipe in the recipe book.

Edit Resin – Edit the current resin in the recipe book.

Save Resin – Save the resin in the recipe book.

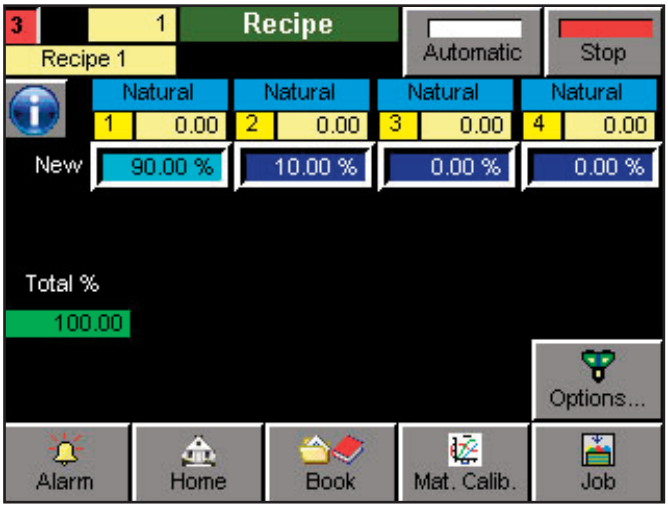
Clear – Delete the selected resin or recipe from the recipe book.

Clear All – Delete all of the resins or recipes from the recipe book.

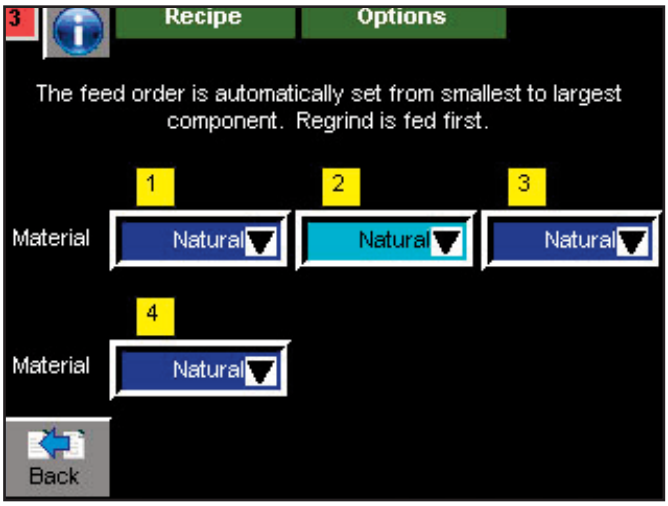
Material Calibration – Navigation to a page where the throughput rate tables for the various extruders can be cleared.

(Continued)

Menu-Recipes (continued)



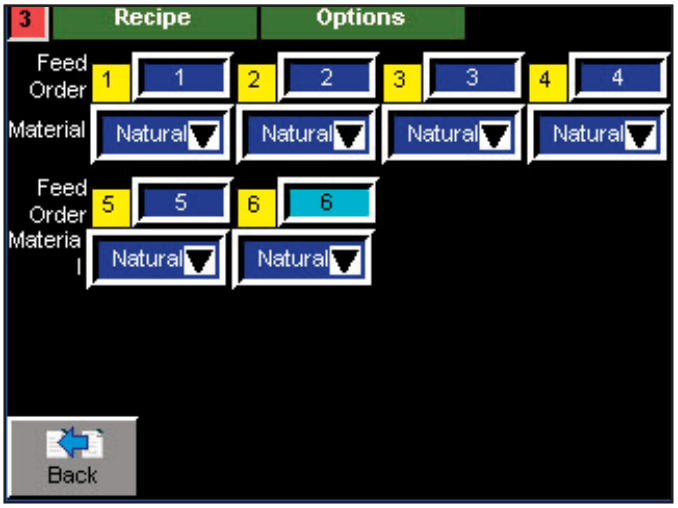
Recipe, Blender



Recipe, Options

(Continued)

Menus-Recipes (continued)



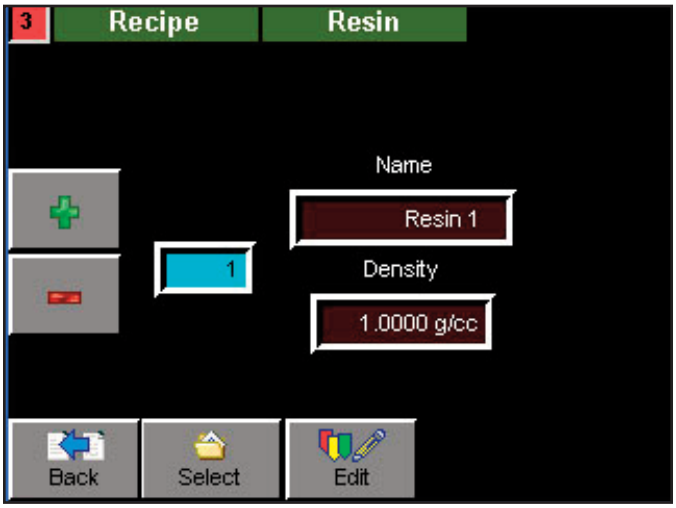
Recipe, Blender Options, with feed order on

Recipes, Job Status

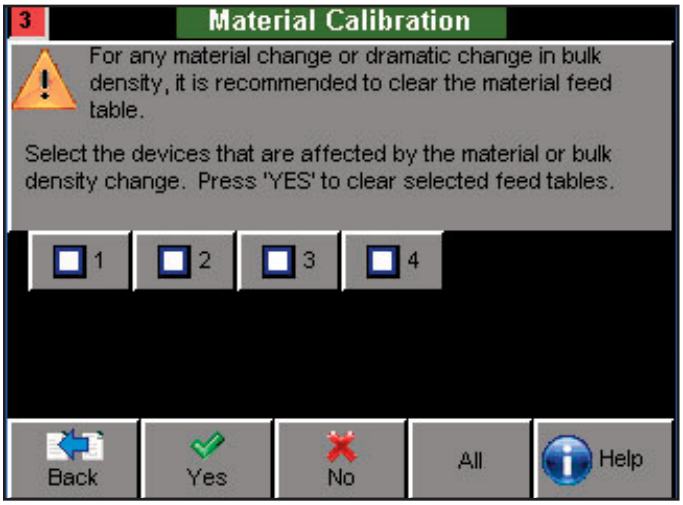
The blender has the capability to store resin names. With this feature enabled, the user is able to track totals data, by resin name, instead of just by component number. To enable the resin name feature go to Setup/System/Recipe and set 'Use Resin Names' to Yes. The resin names choice will then appear in the Recipe Book, for storing each new resin name. The resin name choices that are stored in the recipe book, will then appear on the Recipe page.

(Continued)

Menus-Recipes (continued)



Recipe, Resin Select



Recipes, Material Calibration

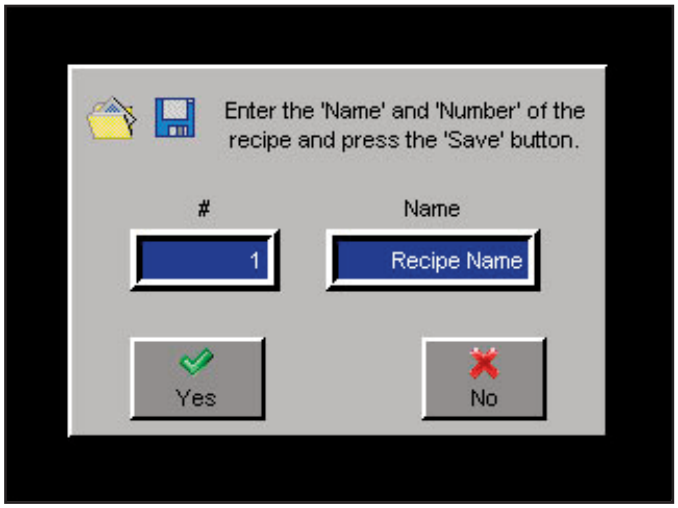
The current production recipe can be saved to the 'Recipe Book'; With the blender in Automatic, press the 'Book' button on the Recipe page, then press the 'Upload' button. After the 'Upload' button is pressed on the recipe page, the user must enter a recipe number and name. Pressing the 'Save' button will save the recipe at the location specified by the recipe number.

✎ **NOTE:** Any recipe at that recipe number location will be overwritten with the new recipe values. The recipe inventory total is however not cleared.

If the recipe number has changed, the user will be asked if the newly stored recipe should become the current production recipe. This is important for tracking recipe totals. If the recipe name changes then the current production recipe name will change to match that of the newly entered name.

(Continued)

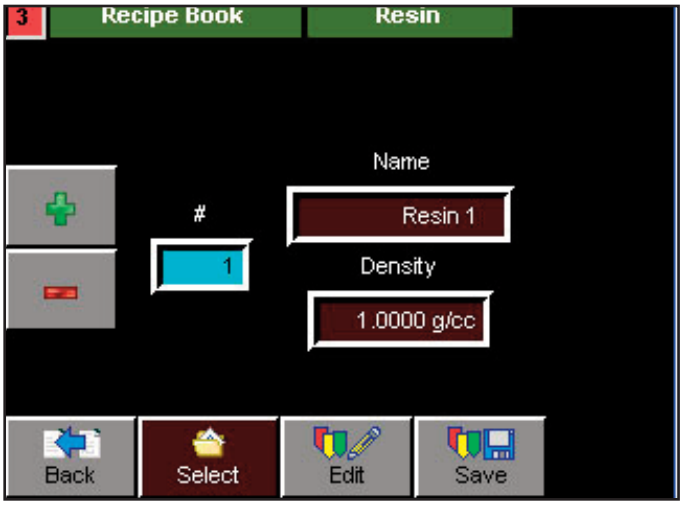
Menus-Recipes (continued)



Recipe, Save Current

Recipe Book

The recipe book is the depository for all 1000 stored recipes. It is here that recipes and resin names can be created and stored. The user must have the correct security level in order to edit any values here. Changes in the recipe book do not affect the 'New Recipe' or the 'Current Recipe' settings.



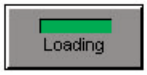
Recipe, Book, Resins

Menus-Loading

Loading - Optional

The blending system can be configured to perform the pump and receiver sequence for filling the component hoppers with resin. This is an optional software feature and also requires additional hardware. To enable the software portion of this feature go to Setup/System and set 'Loading Enabled' to Yes. If the option is present, the blender PLC will monitor receiver demands and sequence the loaders and vacuum pump to fill the material hoppers. Fill times and alarm times for each receiver are also configured in under 'Loading'. If an alarm is generated an alarm entry in the master alarm list will also be present.

ON/OFF – This button will enable/disable loading of this particular receiver body. This information is stored with the system so that in the event of a power cycle, the state will return to that before the power failure.



Loading – This is a master on/off button for all receiver bodies. It will stop all loading immediately.

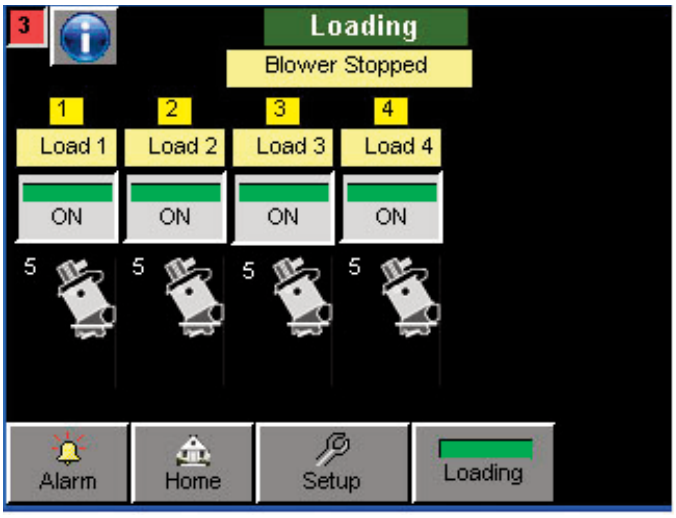
Setup – This button will take the user directly to the setup page to configure the load times for the various loader bodies.

The receiver is requesting a load.

The receiver is currently loading.

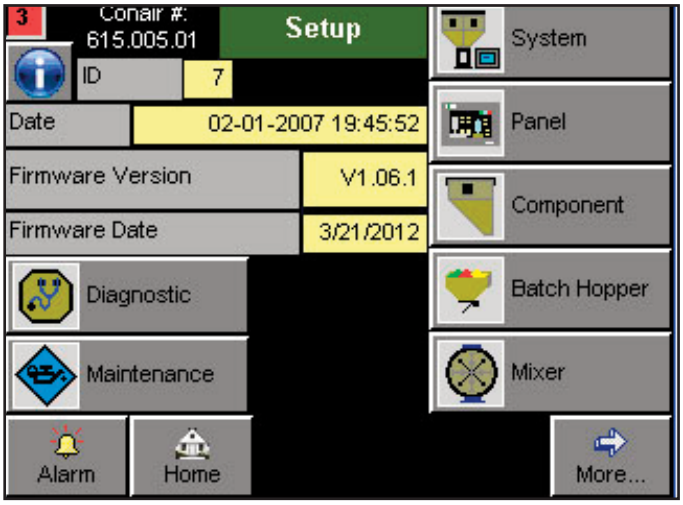
The receiver is currently dumping.

The receiver has not filled within the specified time limit and is generating an alarm.



Loading Status

Menus-System Setup



Setup

Setup is used to configure the TrueBlend SB-2 systems operating parameters – the calibration, the blender model number, number of component bins, batch hopper weight and other parameters.. It also contains the configuration menus for remote communication protocols and all TrueBlend SB-2 Maintenance and Diagnostic functions. Each Setup parameter is configured and then stored in permanent memory.

All setup parameters can be viewed by the user, however, the current security level and operating state will dictate whether or not the parameters can be adjusted. If while in setup, a parameter needs to be changed, touch the desired input field. If the system operating state does not allow a parameter field to be edited, a security violation warning screen will appear. A passcode entry field will be presented. If the correct passcode is entered, the field will become editable.

✎ **NOTE:** After changing any setup parameter, DO NOT power down without first returning to the 'HOME' screen and waiting for at least a minute. The system requires this time to store any parameter changes to the Compact Flash CF card installed in the touch screen.

To navigate the 'Setup' screen, first navigate to the 'Home' page. At the 'Home' screen page press the 'More' button. Press the button labeled 'Setup' and the screen will change to the main 'Setup' screen.

(Continued)

Menus-System Setup (continued)

System – This group of screens is used to set system wide operational parameters. Such as system configuration, recipe entry format, alarm processing, network communications, and relays.

Panel - This group of screens is used to configure the CPU, the touch screen, units, security, and system time.

Diagnostics – This group of screens provides diagnostic information and trending information.

Maintenance – This group of screens provides maintenance features, including backing up the configuration, recipes, and resins.

Defaults – This button will reset the system to the factory default settings.

Quick Setup – This button starts an intelligent process where the system can be setup by responding to simple questions.

Component – This group of screens is for setup of material hoppers and feed systems.

Batch Hopper – This group of screens is for setup of the batch weigh hopper.

Mixer – This group of screens is for setting up the mixer.

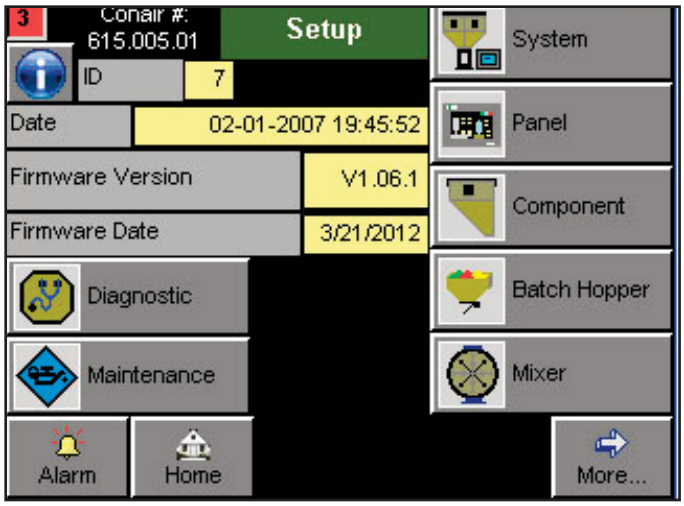
Loading – This group of pages is for setting up the receiver bodies and loading times.

Blower – This group of pages is for setting up the loading system blower.

(Continued)

Menus-System Setup (continued)

This screen also lists the current firmware version and serial number of the touch screen of the TrueBlend SB-2 system.



Setup

System Setup

The System Setup screen configures the overall system parameters such as system configuration, recipe entry format, alarm database, network communications, and relays.

Recipe – Setup parameters that select the method with which target throughput data is entered into the system by the user.

Relays – Setup parameters that enable/disable relay actions or configure location of I/O.

Alarms – Setup parameters that selects the action an alarm takes in the three system operating states (Stop, Manual and Automatic).

Network – Setup parameters for selecting and configuring remote communication ports and protocols.

System – This screen sets parameters that dictate what a system consists of, and how the overall system is being controlled.

Recipe Setup

The Recipe Setup parameters select the method by which target throughput values are entered into the system by the user.

Recipe – Setup parameters that select the method with which target throughput data is entered into the system by the user.

(Continued)

Menus-System Setup (continued)

The basic recipe parameters are as follows:

Parameter	Security	Default	Description
Recipe Entry Method	Service	Extrusion	Extrusion method allows only Natural and Regrind material types. Injection method allows Natural, Regrind, Additive Natural and Additive Batch material types.
Component Entry Options	Service	Percent	Parts – Layer entry values correlate to a simple ratio to the other layers. Percent – Layer entry values correlate to a percentage of total and together all layers must add to 100%.
Use Order Names	Service	No	In reports and on the monitor screens, the system is capable of showing a job/order name. This is for display and reporting purposes only.
Use Resin Names	Service	No	The system can keep track of resin usage if 'resin names' is enabled. This option requires the selection of a resin for each layer target entry. The resins have an assigned density value which may be used depending on the recipe entry method.
Feed Order In Recipe	Service	No	The order in which the components feed can be controlled by the operator using the recipe. If this is set to 'Yes' then the recipe entry will require a feed order.

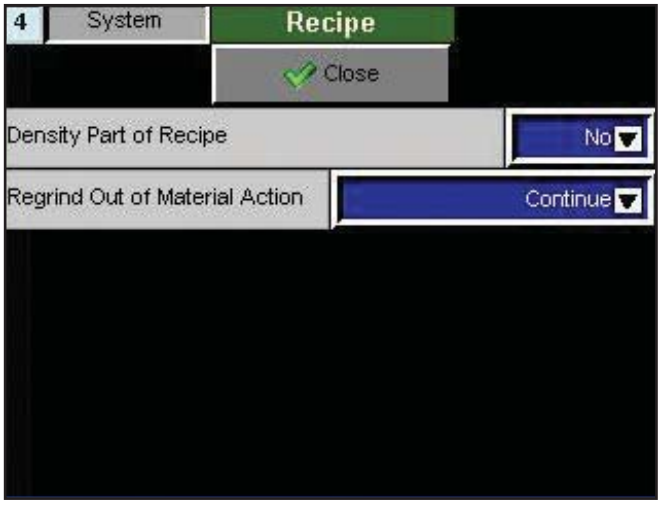
Setup, System, Recipe - Basic

(Continued)

Menus-System Setup (continued)

The advanced recipe parameters are as follows:

Parameter	Security	Default	Description
Density Part of Recipe	Service	No	Yes forces recipe to ask the g/cc value of each component in the recipe.
Regrind Out of Material Action	Service	Continue	Should an empty regrind component allow the blender to Continue (no alarm), Continue with Alarm, Remove and Continue, or Stop with Alarm?

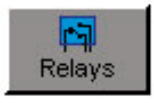


Setup, System, Recipe - Advanced

Relays Setup

This page is used to set up the system configurable relays. The relays that are configurable are as follows:

- auto/hand input relay: on = TrueBlend EXT Only controlled, off = hand control
- system running output relay – 'ON' when system drives are running



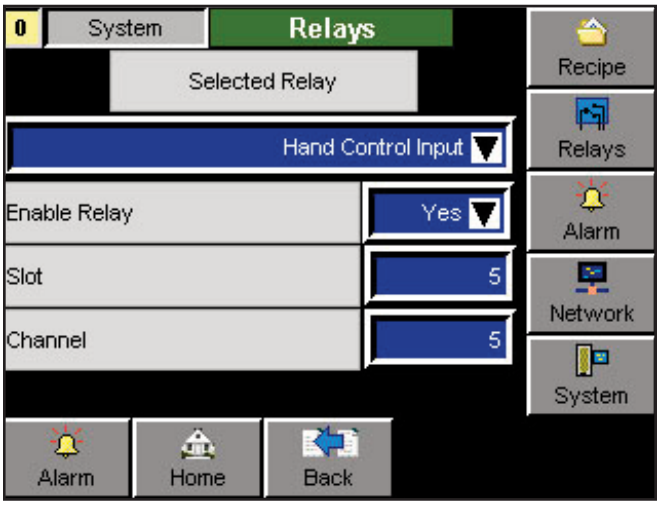
Relays – Setup parameters that enable/disable relay actions or configure location of I/O.

(Continued)

Menus-System Setup (continued)

When pressed, a pull-down menu of available relays and relay parameters can be changed. Select the relay from this list displays the specific parameters for that relay. The 'enable relay' parameter is only available for some relays. The basic parameters are:

Parameter	Security	Default	Description
Enable Relay	Service	No	Relay dependent – If this field is available, it will enable/disable the relay function.
Slot	Service	---	The X20 slot number where the relay is connected.
Channel	Service	---	The X20 input location on the assigned slot.



Setup, System, Relays

Menus-System Setup-Alarms

Alarms Setup

It is possible to customize the severity and actions of all alarms in the system. This screen also has a 'Defaults' button. This button will reset all of the alarms severity back to the default factory state. This will not affect any other setup parameters.

Alarm – Setup parameters that affect the action an alarm takes in the various system operating states (Stop, Manual, and Automatic).

The steps to customize an alarm are:

1 Alarms are assigned to devices. Examples of devices are extruders, additives, a haul-off, and the CPU/System computer. Once a device has been selected, the available alarms for that device will be listed in the alarm pull-down menu.

2 Select the alarm assigned to the device.

3 The alarm actions for the selected device and alarm are displayed: an action for each of the system operating states. Use the pull-down menu to select the desired action.

(Continued)

Menus-System Setup-Alarms (continued)

Parameter	Security	Default	Description
Level To Trigger Output	Service	Information / General / Shutdown	The alarm severity/action which energizes the alarm relay contact.
Device	Service	System, Mixer, batch Hopper, Component X	The device that triggers the Alarm Level.
Alarm	Service	Various - Alarm name that appears on the Screen	Various - The alarm name depends upon the Device Chosen.
Stop	Service	None, Information, General, Shutdown	Alarm Name Priority Level when blender is stopped.
Automatic	Service	None, Information, General, Shutdown	Alarm Name Priority Level when blender is in Automatic.
Email	Service	Alarms sent to emails	Configures SMTP server to allow email alarm notifications.

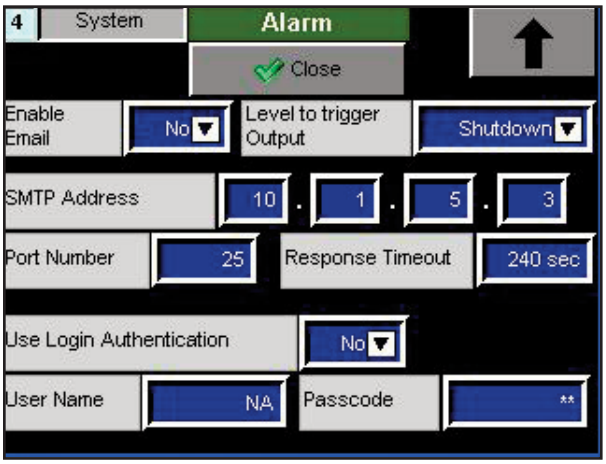
Defaults – The defaults button is used to set all of the alarm actions back to the factory default state.

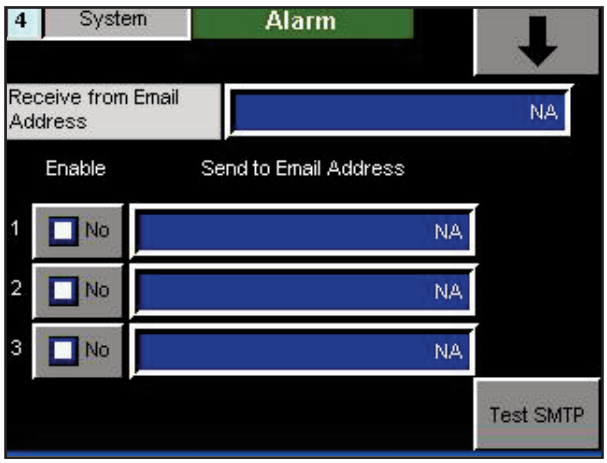
Setup, System, Alarms

(Continued)

Menus-System Setup-Alarms (continued)

Parameter	Security	Min / Max	Description
Enable Email	Service	No / Yes	Turns email alarm feature Off or On.
Level to trigger Output	Service	Information / General / Shutdown	The device that triggers the Alarm Horn.
SMTP Address	Service	Address of SMTP Server to receive alarm email	IP address of the SMTP server connected to the blender.
Port Number	Service	0 / None [25]	SMTP Server port number. Default port number for SMTP servers is 25.
Response Timeout	Service	60 / None [240]	Server response timeout. Error generated if response from server is not within specified time.
Use Login Authentication	Service	No / Yes [No]	When communicating with the SMTP server, does the server require a user login authentication (PLAIN vs LOGIN server authentication). If set to YES, a username and password must be assigned.
User Name	Service	User defined	When login authentication is set to YES, the login username to the SMTP server.
Passcode	Service	User defined	When login authentication is set to YES, the login password to the SMTP server.





Setup, System, Alarms, Email

Parameter	Security	Min / Max	Description
Receive from Email Address	Service	No limit	Enter the email address.
Enable	Service	Check or None	Enables recipient for alarm emails
Send to Email Address	Service	Address of recipient	Enter email addresses of recipients, up to three.
Test SMTP	Service	Press to test feature	Tests email alarm feature by sending test email to enabled recipients.

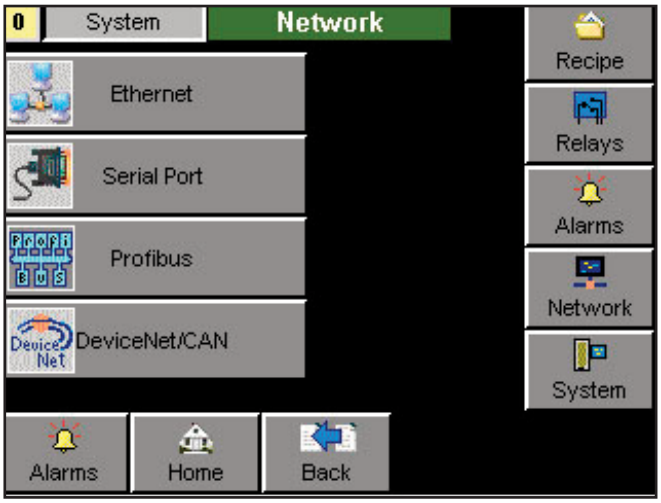
(Continued)

Menus-System Setup-Network

Network Setup

The Network Setup screen is used to configure any remote communication ports used with the TrueBlend SB-2 system. The Ethernet button selects which Ethernet software protocols are to be enabled. Ethernet allows multiple software protocols to be enabled at the same time. The 'serial port' button selects which serial port is to be enabled and the desired software protocol for that port. A serial port can only have one software protocol assigned to it.

Network – Setup parameters for selecting and configuring the various communication ports and software protocols available.

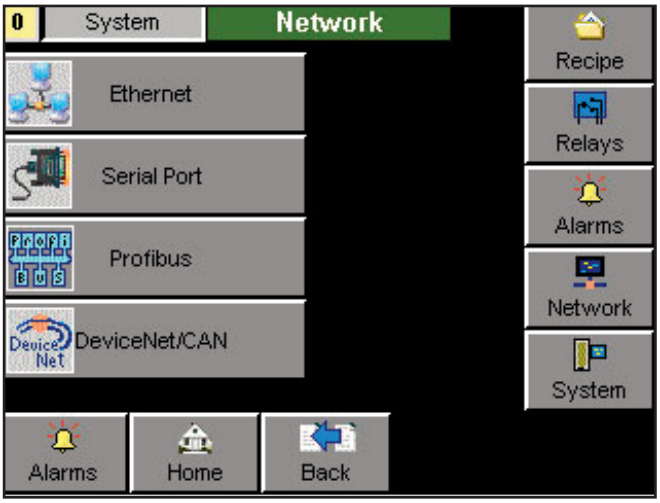


(Continued)

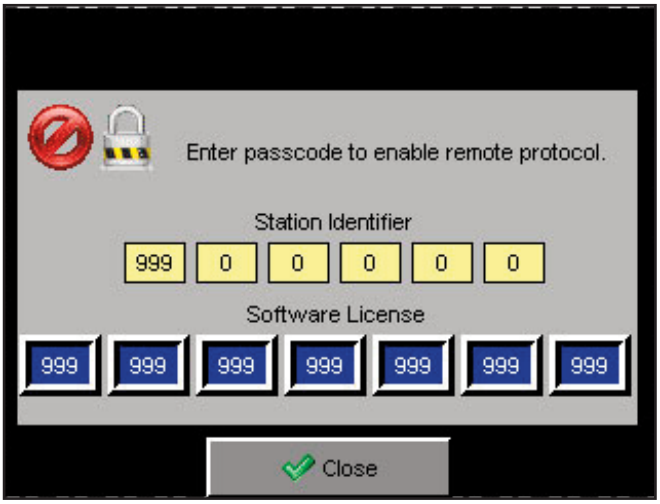
Menus-System Setup-Network (continued)

To enable any remote communications on the TrueBlend SB-2 system, a passcode license must be obtained from Conair. Contact a Conair sales or service representative to obtain this passcode.

The first step in setting up remote communications is to select the hardware port to be used. Selecting the hardware port displays a screen with specific setup parameters for the hardware port chosen.



Setup, System, Network – Main



System, Network – Passcode

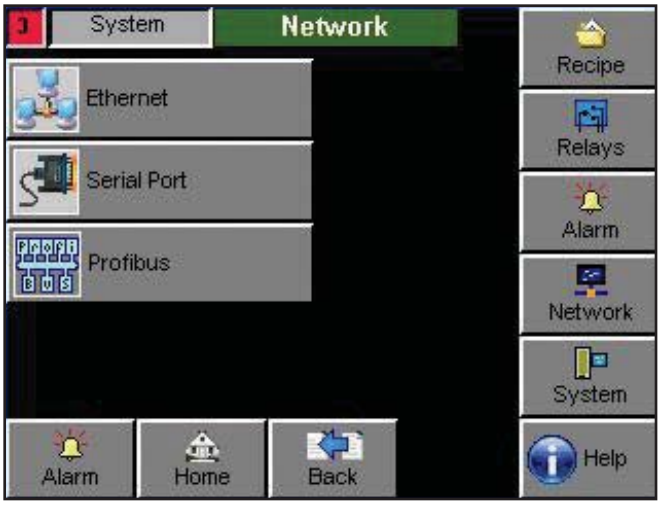
(Continued)

Menus-System Setup-Network (continued)

Ethernet Communications

A variety of software protocols can be used simultaneously on the Ethernet port. The devices IP and Subnet mask are set on the 'Setup' – 'Panel' – 'Display' – 'Advanced' screen.

Parameter	Security	Default	Description
Modbus TCP/IP	Service	No	Modbus 32 bit protocol.
Ethernet/IP	Service	No	
FTP Server	Service	Yes	Allows the CF Memory card to be accessed from a PC and treated like an external memory card.
VNC Server	Service	Yes	Enable the onboard VNC server. This provides connectivity via VNC client running on any PC. Allows duplication of touch screen functionality and full control of system from a PC.
OPC	Service	No	Enable the use of an OPC server on a remote PC for remote access (read/write) of the touch screen internal address points.



Setup, System, Network – Ethernet

Serial Communications

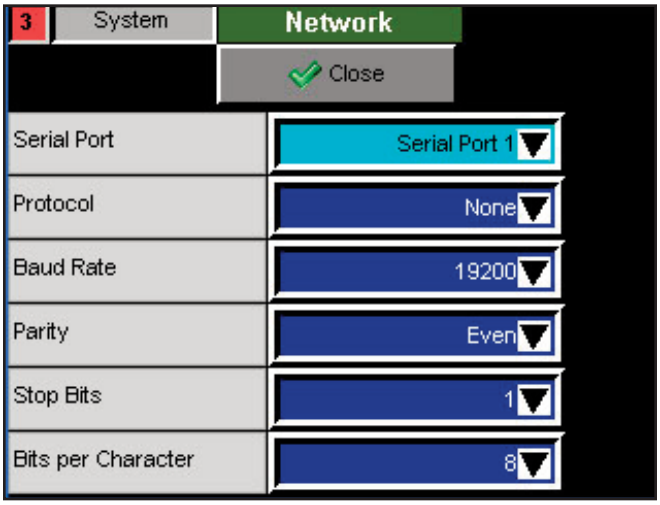
A variety of protocols are available over the system serial ports. Up to a maximum of three ports are available. The connected printer uses a USB port and does not take up one of the available serial ports. Each port can only be assigned to a single software protocol. Serial port functionality is an optional feature. Contact a Conair sales or service representative for further information. Ports available are:

Port 1	RS232 – Custom DB-9
Port 2	RS485/RS422 – Custom DB-9
Port 3	RS485/422 – Pigtail

Menus-System Setup-Configuration

To configure a serial port, first select the port you wish to configure. Then the setup values for the selected port will appear and can be adjusted**.**

Parameter	Security	Default	Min/Max	Description
Serial Port	Service	Serial Port 1	Port 1, 2 or 3	The serial port to configure.
Protocol	Service	None	Modbus / Allen Bradley DF1	The protocol to use on the serial port.
Baud Rate	Service	19200	4800 / 9600 / 36400 / 57600 / 115k	The data rate used on the port.
Parity	Service	Even	None / Even / Odd / High / Low	The type of parity on the port.
Stop Bits	Service	1	1/2	The number of stop bits.
Bits per Character	Service	8	7/8	The number of bits in the data byte.



Setup, System, Network – Serial

System Configuration

This screen sets parameters that dictate what and how the overall system is being controlled. Any changes on this screen will greatly change the operation and screen appearance of the system. To change any of the values on this screen the security level must be at the 'Service' level and the system must be stopped. After any changes made on this screen, a system restart will be required. This is to insure that all the appropriate hardware processes and software parameters are properly set.

After making changes to the application or control modes of the devices, the operator will be asked to enter a new recipe entry method. A recipe is the method for the user to enter the target throughput data into the system. Each type of application or control mode has specific requirements for the data entry.

(Continued)

Menus-System Setup-Configuration

(continued)

The recipe entry question will appear as a popup after an attempt is made to exit the screen. Select a recipe entry method then press 'Close' to exit the popup. The user may now exit the screen normally. This entry can be changed later from the 'Recipe Setup' screen if necessary.

System - This screen sets parameters that dictate what and how the overall system will be controlled.

The basic system configuration parameters are:

Parameter	Security	Default	Min/Max	Description
Number of Components	Service/ Stopped	4	Depends upon Product Model	The number of components for the Product Model chosen.
Product Model	Service/ Stopped	TB45-4	Various	The product model will set up various parameters for all of the components and the batch weigh hopper.
Loading Enabled	Service/ Stopped	No	Yes/No	Enable self-loading. Once this has been changed to YES, the operator will be asked to enter an 'unlock' key.
Self Cleaning System Available	Service/ Stopped	No	Yes/No	Enable self-cleaning. Once enabled, the blender is capable of interfacing to the optional self cleaning feature.
Material level Sensors Available	Service/ Stopped	No	Yes/No	Enable Component Material Level Sensors. Once enabled, the blender is capable of interfacing to the optional Material Level Sensors.

The Advanced System Configuration Parameters are for TrueBlend EXT Only: See The TrueBlend EXT User guide for complete information.

Parameter	Security	Default	Min/Max	Description
Application	Service/ Stopped	Blown Film	Blown Film / Sheet / Wire and Cable / Pipe and Tubing / Profile	The type of extrusion system being controlled. Affects recipe entry.
Extruder control mode	Service/ Stopped	Control	Unused / Monitor / Control	The control mode of the connected extruders. Control – extruder speed is controlled by True Weigh system. Affects Recipe entry.
Hauloff control mode	Service/ Stopped	Unused	Unused / Monitor / Control	The control mode of the product 'take-away' device. Control – the speed of the take-away device is controlled by True Weigh System. Affects recipe entry.
Number of additives	Service/ Stopped	0	0/2	The total number of material additive devices present in the system.
Use Regrind/ Scrap in extruder	Service/ Stopped	No	Yes/No	Used on TBEXT Models Only. When enabled, the scrap percentage becomes part of the extrusion recipe.

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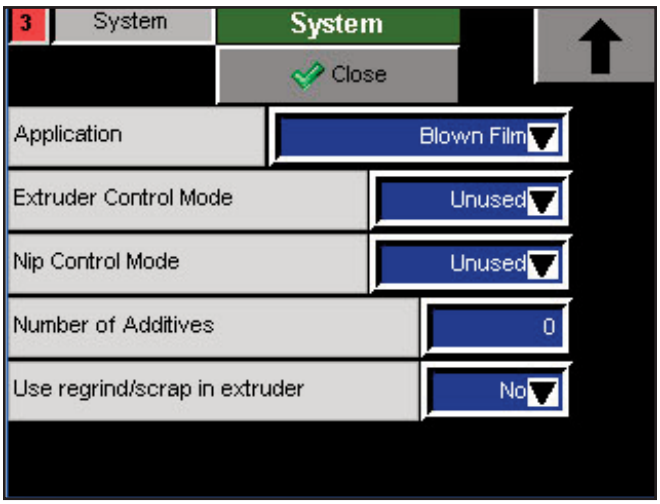
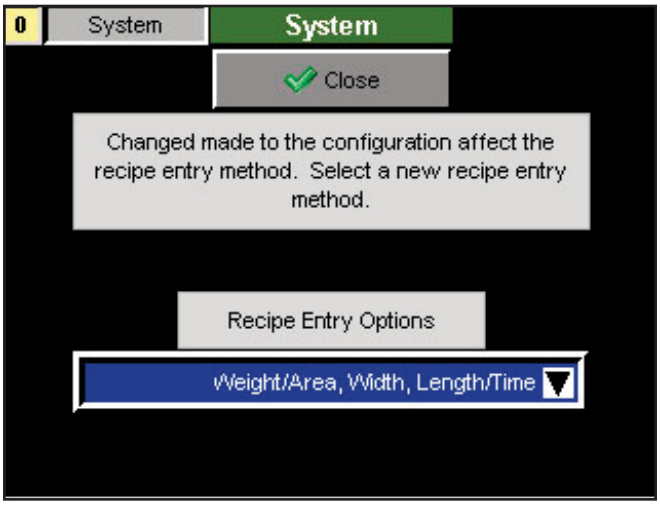
Menus-System Setup-Configuration

(continued)



Setup, System, System



Setup, System, System – Recipe

Menus-System Setup-Panel Setup

Panel Setup

This group of screens is used to configure the CPU, the touch screen, units, security level, and system date and time.

Units – Setup the numerical units used by the system.

Security – Setup the pass-codes for the various security levels as well as settable access rights.

(Continued)

Menus-System Setup-Panel Setup

(continued)

Panel – Sets parameters relevant to the touch screen and CPU.

Date – The current system date and time.

Panel

This screen sets parameters relevant to the touch screen and the CPU.

Panel – Sets parameters relevant to the touch screen and CPU.

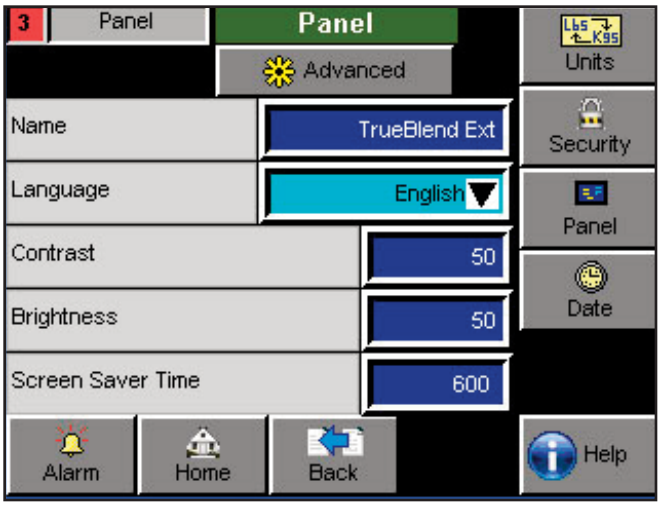
The basic parameters are as follows:

Parameter	Security	Default	Min/Max	Description
Name	Service	TrueBlend	----	The name of the extrusion line (This is displayed on the monitor pages and reports).
Language	Operator	English	English / French / Spanish / German / Chinese	Default display language seen after restart sequence.
Contrast	Operator	50	10/100	Display contrast. The contrast setting of the LCD display.
Brightness	Operator	50	10/100	Display brightness. The brightness setting of the LCD display.
Screen Saver Time	Operator	600	0/7200	This is the amount of time that will elapse before the display backlight will turn off. Touching the screen will turn on the backlight if it is off. Valid values are 0 (turn off the screen saver), 120 seconds – 7200 seconds.

(Continued)

Menus-System Setup-Panel Setup

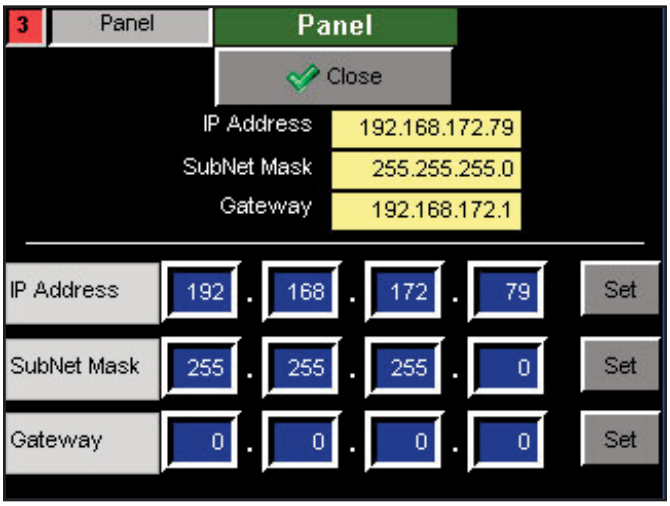
(continued)



Setup, Panel, Display - Basic

After the screen for the 'Advanced' parameters is closed, the system will be updated with the new values. To change the IP address, Subnet mask or Gateway, edit the values and press SET. A system restart is not required after changing these values. The advanced parameters are as follows:

Parameter	Security	Default	Description
IP Address	Setup	192.168.1.79	The Ethernet network IP Address.
SubNet Mask	Setup	255.255.255.0	The Ethernet network SubNet Mask.
Gateway	Setup	0.0.0.0	The Ethernet Gateway.



Setup, Panel, Display - Advanced

Menus-System Setup-Units

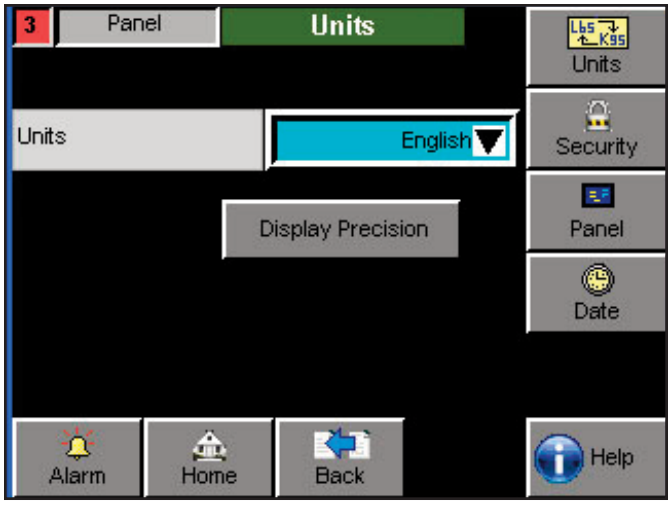
Units

This screen parameters relevant to the units the system uses for display and data entry.

Units – Setup the numerical units used by the system.

The basic parameters are as follows:

Parameter	Security	Default	Description
Units	Setup	English	Use the English system of units for data entry and display. Can be changed to Metric.



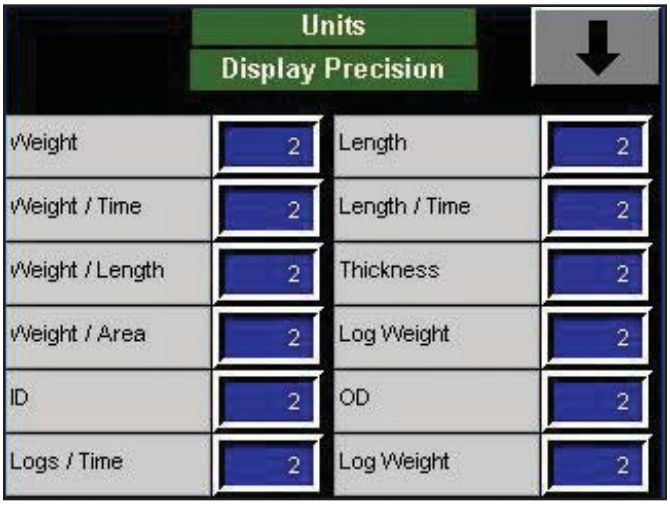
Setup, Panel, Units – Basic

The Display Precision parameters allow the user to define the number of decimal places to display.

NOTE: Only weight parameter is used for blending operations.

(Continued)

Menus-System Setup-Units (continued)



Setup, Panel, Units – Display Precision

Menus-System Setup-Security

Security

This screen sets parameters relevant to the security system.

Security – Setup the pass-codes for the various security levels, as well as, settable access rights.

The basic parameters are as follows:

Parameter	Security	Default	Min/Max	Description
Level to Clear Inventory Totals	Service	Setup	Guest / Operator / Setup / Service	The security level required to clear the inventory totals on the 'Totals' page.
Level to Clear Shift Totals	Service	Operator	Guest / Operator / Setup / Service	The security level required to clear the shift totals on the 'Totals' page.
Level to Save Recipes/ Resins	Service	Setup	Guest / Operator / Setup / Service	The security level required to edit and save the Recipe /Resin names in the 'Recipe Book.
Level to Calibrate	Service	Operator	Guest / Operator / Setup / Service	The security level required to Calibrate the Batch Hopper.
Level for Manual Blender Control	Service	Operator	Guest / Operator / Setup / Service	The security level required to set or test the blender controls in the Manual Control Screen.

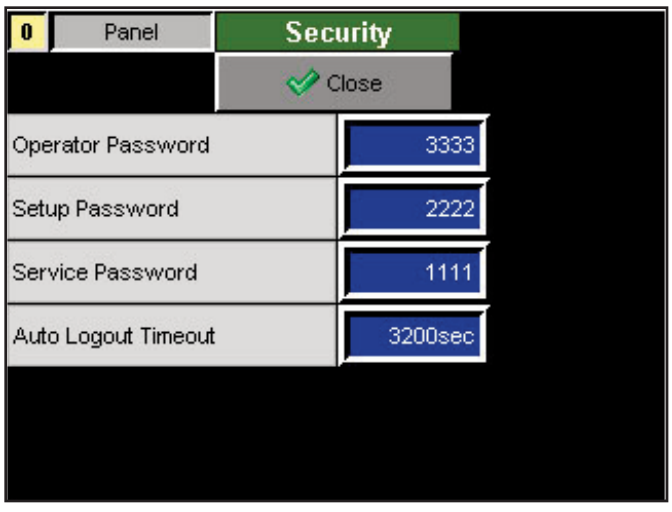
(Continued)

Menus-System Setup-Security (continued)

Setup, Panel, Security – Basic

The advanced parameters are as follows:

Parameter	Security	Default	Min/Max	Description
Operator Password	Service	3333		The passcode needed to enter the operator security level.
Setup Password	Service	2222		The passcode needed to enter the setup security level.
Service Password	Service	1111		The passcode needed to enter the service security level.
Auto Logout Timeout	Service	0	0/...	The amount of time that passes in seconds before the current security level is changed to the minimum security level (Guest). (0-disables, 300 or higher valid)



Setup, Panel, Security – Advanced

(Continued)

Menus-System Setup-Security (continued)

Date

This screen sets parameters relevant to the current system time.

Date – Set the current system time and date.

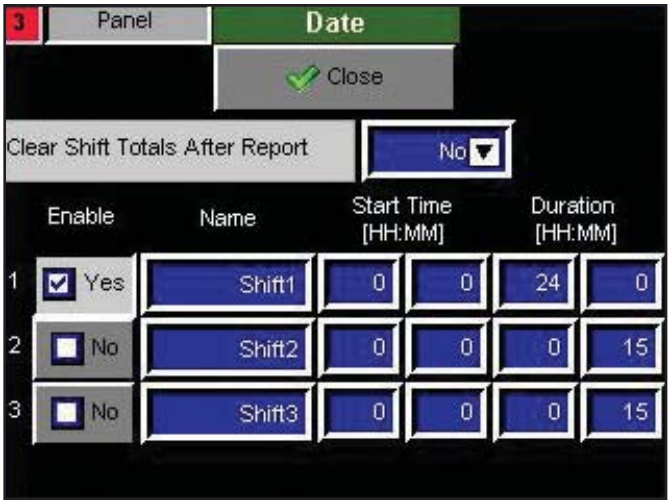
The basic parameters are:

Parameter	Security	Min/Max	Description
Hour	Setup	0-24	Using a 24-hour clock this value represents the current hour.
Minute	Setup	0-59	Set the current minute.
Second	Setup	0-59	Set the current second.
Month	Setup	1-21	Set the current month.
Day	Setup	1-31	Set the current day.
Year	Setup	-----	Set the current year using a four digit value.

Setup, Panel, Date – Basic

Parameter	Security	Min/Max	Description
Clear Shift Totals After Report	Service	No/ Yes [No]	Clear the shift totals after a Shift Report is completed.
Enable	Service	Check or None	Enables Shift 1, 2 or 3 Automatic Shift Reporting Outputs.
Name	Service	Shift 1, 2 or 3	Enter the desired name of the shift.
Start time	Service	Hours : Minutes	Enter the start time of the shift.
Duration	Service	Hours : Minutes	Enter the time length of the shift.

Menus-Component Setup (continued)



Setup, Component, Control – Advanced

Component Setup

The component setup screens are used to set parameters that are relevant to an individual material hopper. Parameters include Control and Alarm parameters. A blender will have multiple material hoppers and each hopper will have its own parameters.

When first entering the component setup screens the component 1 is always presented first. In the upper left corner of the screen the name of the component will show this. To change to a different component, the '+'/'-' buttons are provided. Press these buttons to navigate through the available components, until the desired component's name is shown. The set parameters shown will now be for the selected component.

Control Setup

Control parameters that are used to control the algorithm for monitoring the weight in the hoppers and setting the extruder speed.

Control – This screen sets control parameters which affects the performance of the control algorithm.

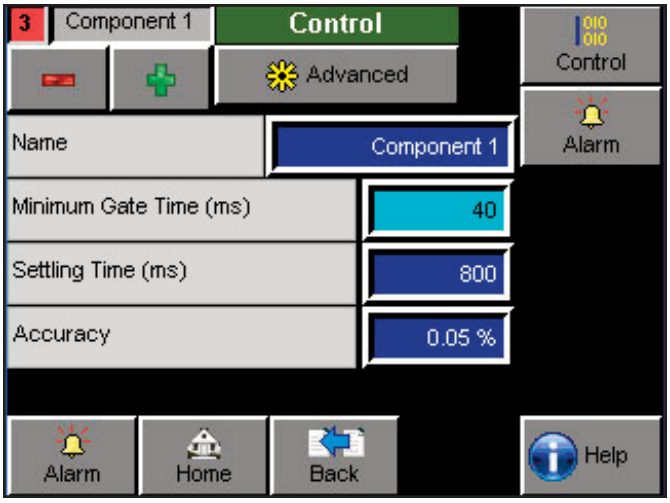
Alarm – This screen sets parameters which control when a component alarm might occur.

The basic parameters are:

Parameter	Security	Default	Min/Max	Description
Name	Service	Component 1		Name of the component used in reporting.
Minimum Gate time (ms)	Setup	Hopper Size Dependent	0/9999	The minimum amount of time the gate can open and feed material reliably (In milliseconds).
Setting Time (ms)	Service	800	0/9999	The amount of time the material fed into the Batch hopper should rest before a feed weight is read.
Accuracy	Service	.05%	0/100	The gate feed tolerance.

(Continued)

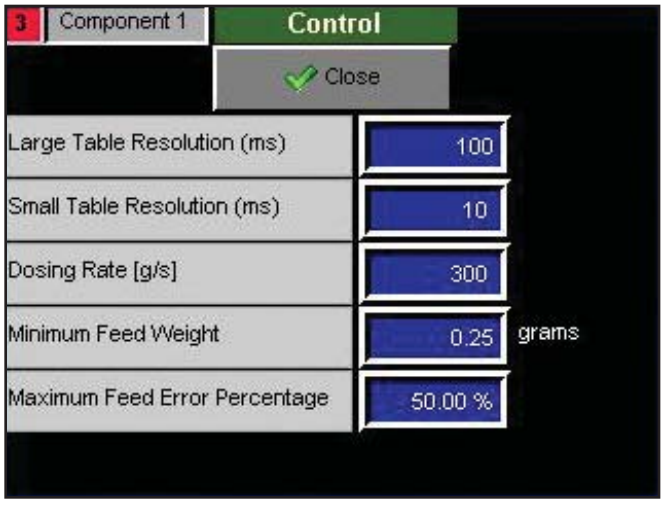
Menus-Component Setup (continued)



Setup, Component, Control – Basic

The advanced parameters are as follows:

Parameter	Security	Default	Min/Max	Description
Large Table Resolution	Service	20	0/999	The time difference in milliseconds between entries in the feed table for large feed rates.
Small Table Resolution	Service	10	0/999	The time difference in milliseconds between entries in the feed table for small feed rates.
Dosing Rate	Service	300	0/999	The default dosing rate in grams/second, used for volumetric mode.
Minimum Feed Weight	Service	.25g	0/999	The minimum amount of feed required before an out of material alarm occurs.
Maximum feed error Percentage	Security	50%	0/999	The maximum dosing eror allowed before the material calibration table is cleared.



Setup, Component, Control – Advanced

Menus-Alarm Setup

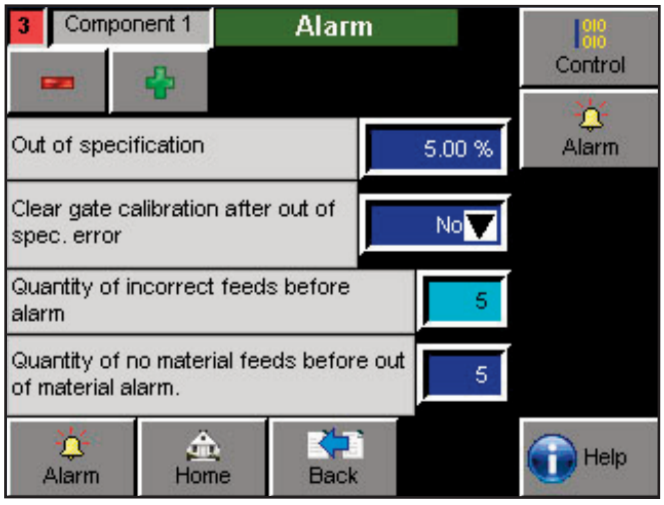
Alarms

The component alarm screens display parameters used to generate alarms for the component feeders.

Alarm – sets parameters which control when a component alarm might occur.

The basic alarm parameters are:

Parameter	Security	Default	Min/Max	Description
Out of Specification	Setup	5	0/100	Percent to exceed before alarm.
Clear Gate Calibration after Out of Spec	Setup	No	Yes/No	Yes forces the material feed table to clear.
Quantity of incorrect feeds before alarm	Setup	5	1/10	Force alarm if number of feeds are out of spec.
Quantity of no material feeds before out of material alarm.	Setup	5	1/10	Forces alarm if number of gate feeds produce no weight.



Setup, Component, Alarms – Basic

Menus-Hopper Setup

Batch Hopper

The batch hopper setup screens are used to set parameters that are relevant to the batch weigh hopper. Parameters include Control Parameters, Loading, Alarms, and Calibration.

Control – This screen sets control parameters which affects the performance of the control algorithm.

Calibrate – This screen is used to calibrate the tare weight of the weigh hopper.

Control Parameters

Control parameters that are used to control the algorithm for monitoring the weight in the batch hopper.

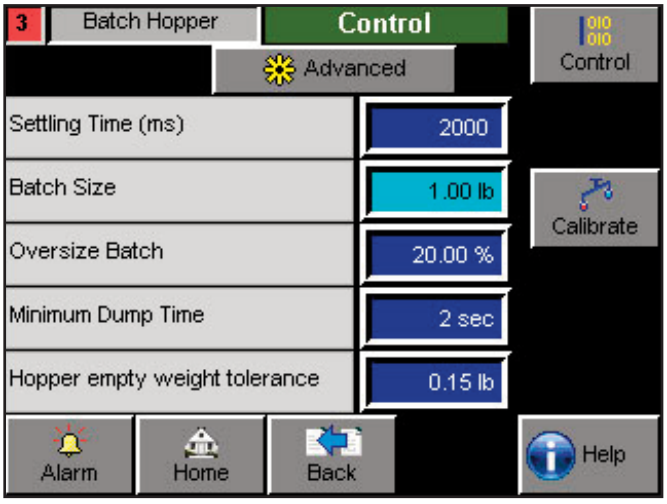
Control – This screen sets control parameters which affects the performance of the batch weigh hopper.

The basic alarm parameters are:

Parameter	Security	Default	Min/Max	Description
Setting Time (ms)	Setup	2000	0/9999	Time required for hopper to be at rest before dosing.
Batch Size	Setup	Based on Product Model	0/100	Sets batch size for blender weigh hopper.
Oversize Batch	Setup	20%	0/100	Percent oversize of batch allowed before alarm.
Minimum Dump Time	Setup	2 sec	0/100	Time required to dump blender batch hopper.
Hopper Empty Weight Tolerance	Setup	0.15lb	0/100	Minimum weight after dump to prevent 'hopper not dumping alarm'.

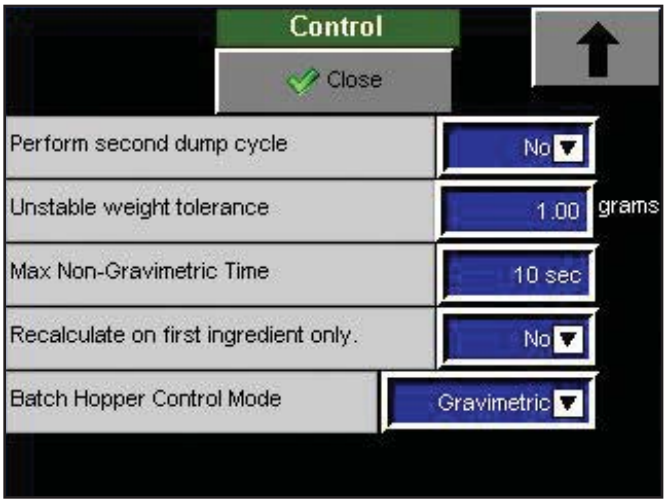
(Continued)

Menus-Hopper Setup (continued)



Setup, Batch Hopper, Control - Basic

Parameter	Security	Min/Max	Description
Perform Second Dump Cycle	Service	No/ Yes [No]	Set to Yes, to force the batch hopper to dump itself out twice, per batch completion.
Unstable Weight Tolerance	Service	1 gram	Maximum amount of batch hopper weight variation allowed. Variation less than this setting will allow dosing to continue. Variation greater than this amount, will prevent dosing to continue.
Max Non-Gravimetric Time	Service	10 seconds	Maximum amount of time, batch hopper weight variation can occur, before 'Cannot Run In Gravimetric' alarm occurs.
Recalculate on first ingredient only	Service	No/ Yes [No]	Set to NO, then batch size to dose is recalculated after every ingredient is dosed. Set to Yes, then batch size to dose is recalculated only after first ingredient is dosed.
Batch Hopper Control Mode	Service	Gravimetric/Volumetric [Gravimetric]	Changes the mode of the blender operation between gravimetric (weighed) and volumetric (not weighed) operation.

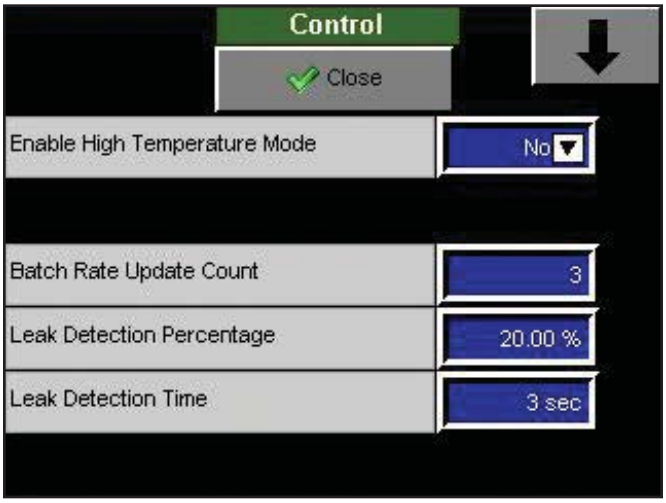


Setup, Batch Hopper, Control – Advanced

(Continued)

Menus-Hopper Setup (continued)

Parameter	Security	Min/Max	Description
Enable high temperature mode	Service	No/ Yes [No]	Set to Yes, to force the batch hopper to dump itself out , then wait to make a new batch once mixer dumps out.
Batch rate update count	Service	3	Number of times to make a batch, to average and display lbs/hr or kg/hr, on Home page.
Leak detection percentage	Service	20%	Maximum percentage the batch weight is allowed to rise, when at rest, before a 'Gate Valve Failure' alarm occurs.
Leak detection time	Service	3 seconds	Maximum seconds the batch weight is allowed to rise, when at rest, before a 'Gate Valve Failure' alarm occurs.



Setup, Batch Hopper, Control – Advanced

(Continued)

Menus-Hopper Setup (continued)

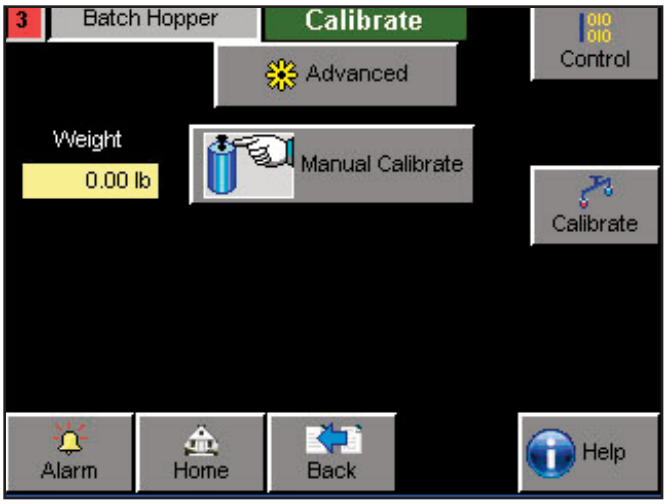
Calibration

Calibration is the process by which the tare weight of the hopper is determined. In order to determine the weight of material in the hopper, two weight readings are required, an empty hopper weight, and a hopper weight with some known weight present. The True Blend system uses a Manual Calibration procedure to learn the tare weight of the hopper. After the tare weight is learned, the maximum hopper weight is obtained by placing a test weight in the hopper.

✎ **Note**: The blender must be stopped and the user must have a security level of Service.

Calibrate – This screen is used to calibrate the tare weight of the weigh hopper

Manual Calibrate – Press to Calibrate the weigh hopper using a test weight. Follow instructions on screen.



Setup, Batch Hopper, Calibrate

Menus-Mixer Setup

Mixer Setup

The mixer setup screens are used to set parameters that are relevant to the mixing device. Parameters include Control Parameters.

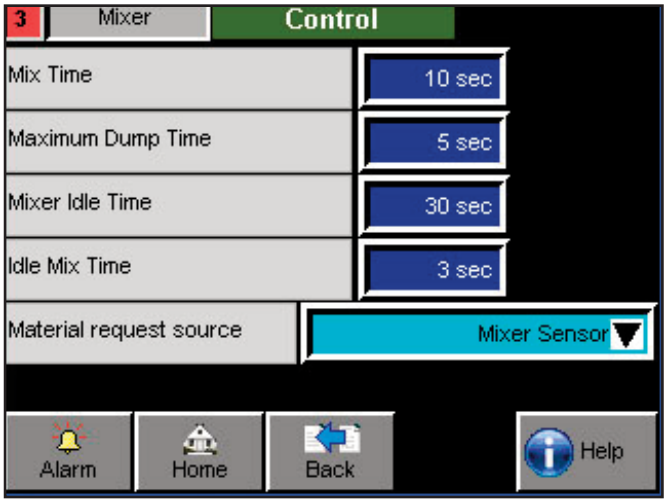
Control Parameters

Control parameters that are used to control the algorithm for mixing the material and controlling the mixing chambers dump gate.

Control – This screen sets control parameters which affect the performance of the mixer.

Parameter	Security	Default	Min/Max	Description
Mix Time	Setup	10	0/60	Blender batch mix time (sec).
Maximum Dump Time	Setup	5	0/60	Open seconds for mixer dump valve.
Mixer Idle Time	Setup	30	0/9999	Idle time for mixer if batch not dumped after mixing.
Idle Mix Time	Setup	3	0/60	Mix time for mixer if batch not dumped after mixing.
Material Request Source	Setup	Mixer Sensor	Mixer Prox. External Input Extruder Hopper TBEXT Only Remote Hopper TBEXT Only	

Menus-Loading Setup



Setup, Mixer, Control – Basic

Loading Setup

The blender has the capability to provide self-loading. It will monitor requests for loads from the receiver bodies and then sequence the receiver valves and the blower pump to load material. This feature requires an unlock License code. Once unlocked the setup page will provide two additional setup buttons in the command bar for setting up both the loaders and the blower pump.

Menus-Loader Setup

Loader Setup

This is where the receiver/loader parameters are set for each loader body.

When first entering the loader setup screens the loader 1 is always presented first. In the upper left corner of the screen the name of the loader will show this. To change to a different loader, the '+'/'-' buttons are provided. Press these buttons to navigate through the available loaders, until the desired loader's name is shown. The set parameters shown will now be for the selected loader.

Control – Enable/disable and configuration parameters for the receiver body.

Time – Set loading, dumping, and alarm times for the receiver body.

(Continued)

Menus-Loader Setup (continued)

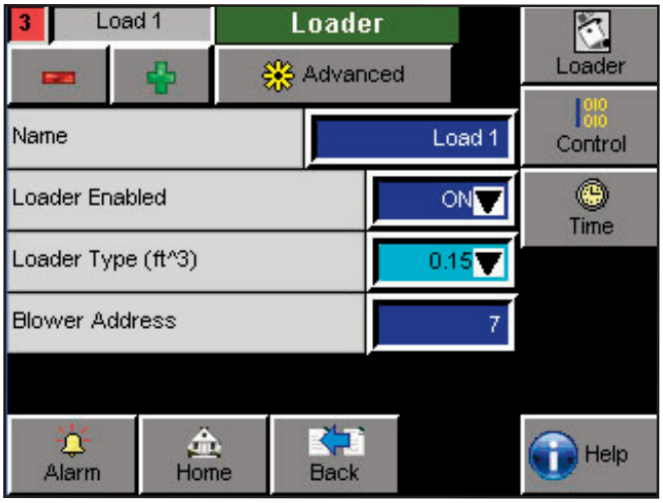
Loader Control

The following are basic control parameters.

Control – Enable/disable and configuration parameters for the receiver body.

The basic parameters are:

Parameter	Security	Default	Min/Max	Description
Name	Service	Load x	0/100	The name of the loader.
Loader Enable	Service	On	Off/On	Whether or not this loader is available.
Loader Type	Service	0.15	0.15/0.5/1.0/1.8/3.0	The capacity of the loader.
Blower Address	Service	7		The PLC Slot Address for the Blower.



Loader, Setup, Control

Loader Times

The following page is used to control the loading times and alarm times.

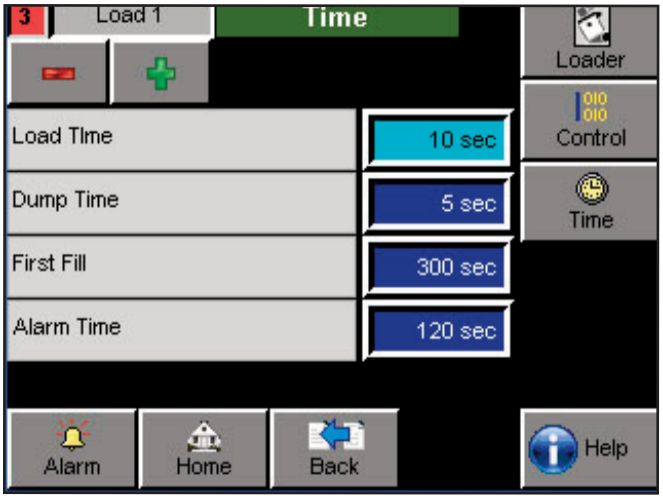
Time – Set loading, dumping, and alarm times for the receiver body.

(Continued)

Menus-Loader Setup (continued)

The basic parameters are:

Parameter	Security	Default	Min/Max	Description
Load Time	Operator	10	2/180	The amount of time material will be collected.
Dump Time	Operator	5	2/180	The amount of time it will take to dump the material.
First Fill	Operator	300	0/3600	For the first fill of the receiver body this provides an extended time before generating an alarm.
Alarm Time	Operator	120	0/3600	The amount of time passed before generating an out of material alarm, after the first fill has occurred.



Loader, Setup, Times

Menus-Blower Setup

Blower Setup

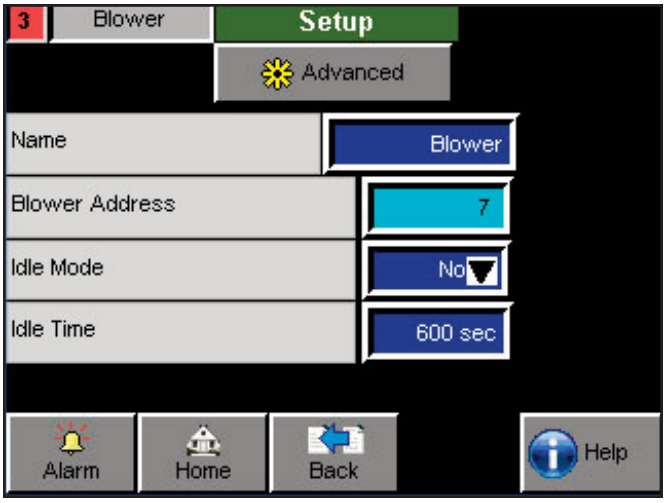
Control parameters to control the connected pump/blower.

The basic parameters are:

Parameter	Security	Default	Min/Max	Description
Name	Service	Blower		The name of the blower.
Blower Address	Service	7	0/255	The address of the networked blower. (not yet supported)
Idle Mode	Operator	No	Yes/No	Enable to use idle mode valve.
Idle Time	Operator	600	0/9999	Amount of time pump continues to run, if no receiver creates a demand.

(Continued)

Menus-Blower Setup (continued)

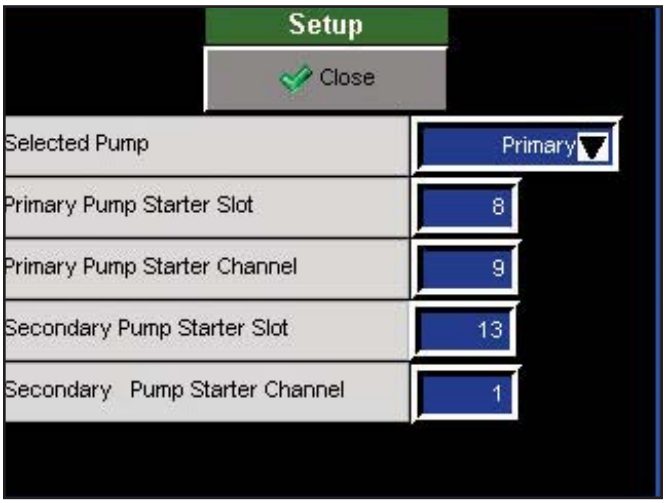


Setup, Blower

Advanced Control parameters to control the connected pump/blower.

The basic parameters are:

Parameter	Security	Default	Min/Max	Description
Selected Pump	Service	Primary	Primary/ Secondary	The name of the blower selected to edit.
Primary Pump Starter Slot	Service	8	0/255	The PLC Slot address of the networked blower. (not yet supported)
Primary Pump Starter Channel	Service	9		Starter Output Channel Number on the Slot.
Secondary Pump Starter Slot	Service	13	0/255	The PLC Slot address of the networked blower. (not yet supported)
Secondary Pump Starter Channel	Service	1		Starter Output Channel Number on the Slot.



Setup, Blower, Advanced

Menus-Diagnostics

Diagnostics

The diagnostics screens are used for diagnosing system control.

Main Diagnostics Page

From the main 'Setup' page press the diagnostics button to see the main diagnostics page.

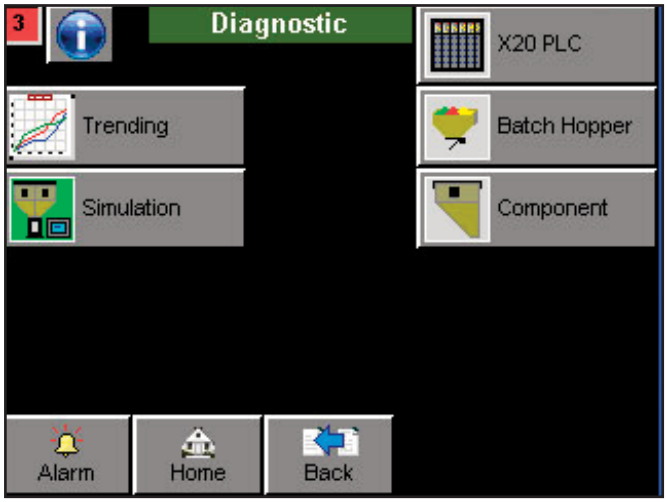
Trending – Navigate to a trend screen to select from a variety of data values. These values are plotted versus time. The user can display or manipulate the plots.

X20 PLC – Navigate to screens that display the status of the X20 PLC slices(slots) and the i/o within the system.

Batch Hopper – Navigate to screens that display the status of the current batch being processed by the batch hopper

Component – Navigate to screens that display the status of the selected gate as well as screens which can perform feed by time and weight tests.

Simulation – Navigate to a set of screens where the various devices in the system can be put into simulation mode.



Diagnostics, main

Menus-Maintenance

Maintenance

The maintenance screen buttons allow saving and retrieval of the configuration, recipe, and resin names to a USB thumb-drive. This screen also displays the license pass codes for the remote communication option(s) purchased with the system.

Trending – Navigate to a trend screen to select from a variety of data values. These values are plotted versus time. The user can display or manipulate the plots.

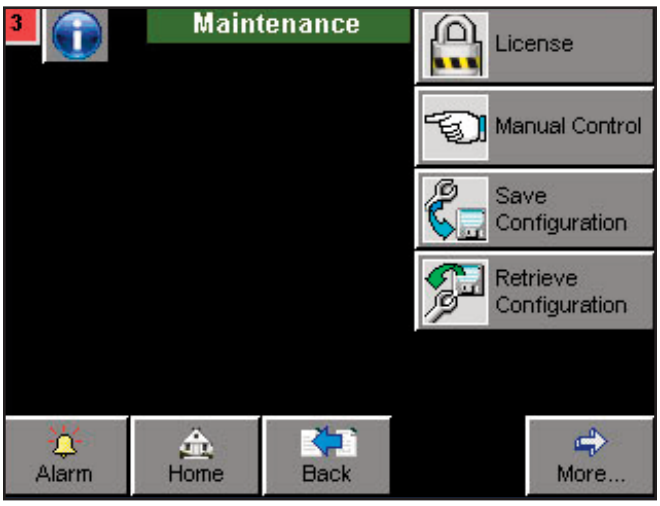
X20 PLC – Navigate to screens that display the status of the X20 PLC slices(slots) and the i/o within the system.

Batch Hopper – Navigate to screens that display the status of the current batch being processed by the batch hopper

Component – Navigate to screens that display the status of the selected gate as well as screens which can perform feed by time and weight tests.

Simulation – Navigate to a set of screens where the various devices in the system can be put into simulation mode.

Retrieve Resins – Retrieve the resins from a USB thumb-drive.



Maintenance

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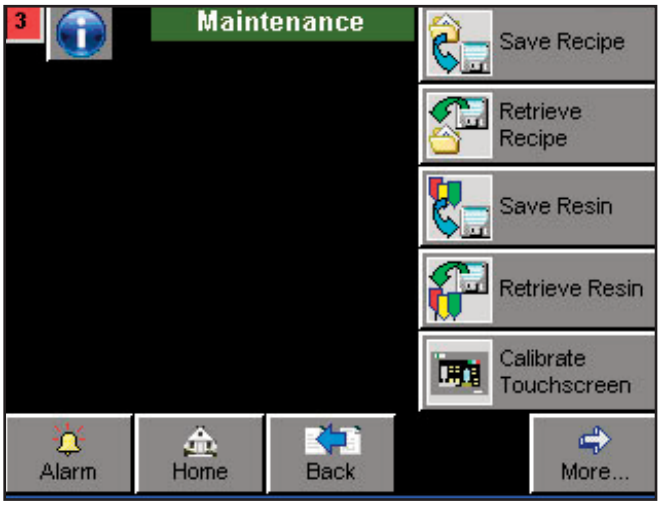
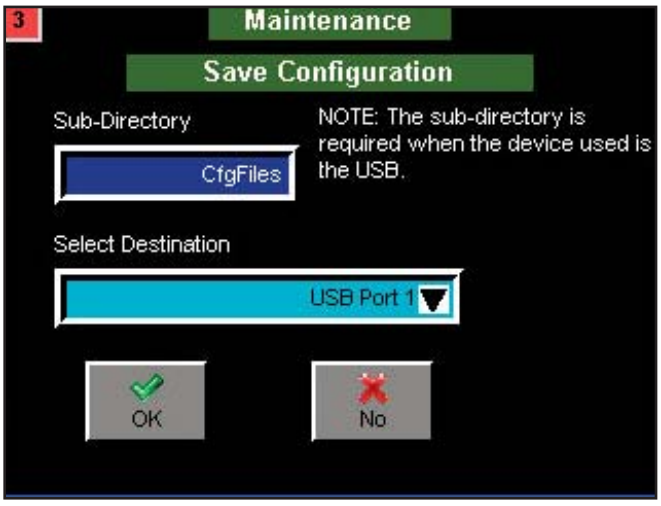
Menus-Maintenance (continued)



Maintenance - More

Save/Retrieve Configuration

This feature allows the user to Save the Setup Parameters (Save Configuration) to a USB thumb drive or to Upload from a USB thumb drive (Retrieve Configuration) a previously saved file of Setup Parameters. If Recipe or Resin names are configured to be part of the Recipe (Setup/System/Recipe) this information can be saved or retrieved from a USB thumb drive as well.



Select USB Slot

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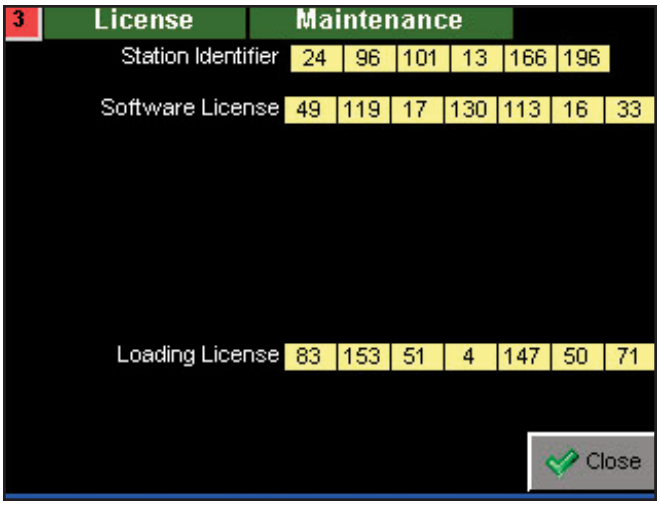
Menus-Maintenance (continued)

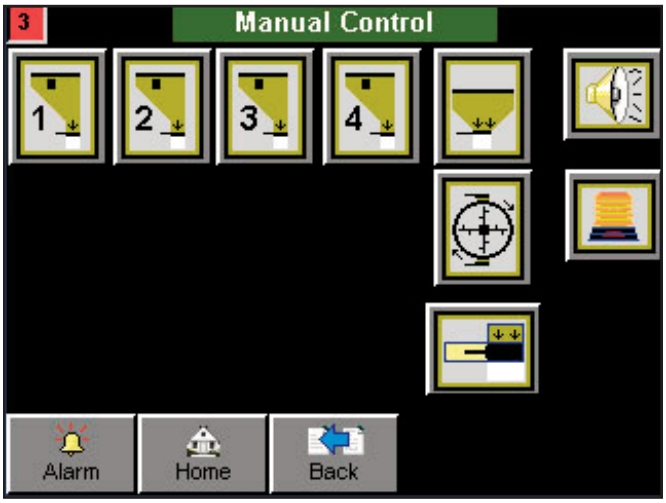


Maintenance, License Products

Menus-Manual Control

Manual Control

Manual Control allows the user, or a technician, to manually activate each component hopper solenoid valve, batch hopper dump valve, mixer motor starter, mixer dump valve, alarm horn and the alarm beacon. This screen is useful for diagnosing PLC output problems for each of these blender devices.

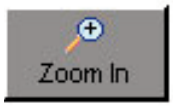


Manual Control

Menus-Trending

Trending

The maintenance screen buttons allow saving and retrieval of the configuration, recipe, and resin names to a USB thumb-drive. This screen also displays the license pass codes for the remote communication option(s) purchased with the system.



Trending – Navigate to a trend screen to select from a variety of data values.

X20 PLC – Navigate to screens that display the status of the X20 PLC slices(slots) and the i/o within the system.

Batch Hopper – Navigate to screens that display the status of the current batch being processed by the batch hopper

Component – Navigate to screens that display the status of the selected gate as well as screens which can perform feed by time and weight tests.

Simulation – Navigate to a set of screens where the various devices in the system can be put into simulation mode.

Retrieve Resins – Retrieve the resins from a USB thumb-drive.

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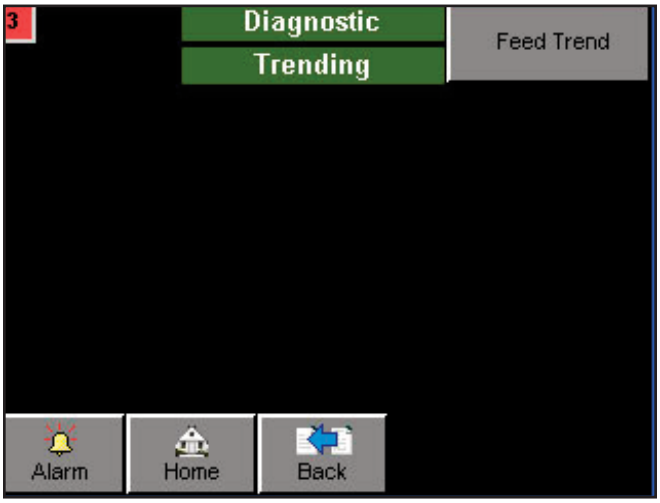
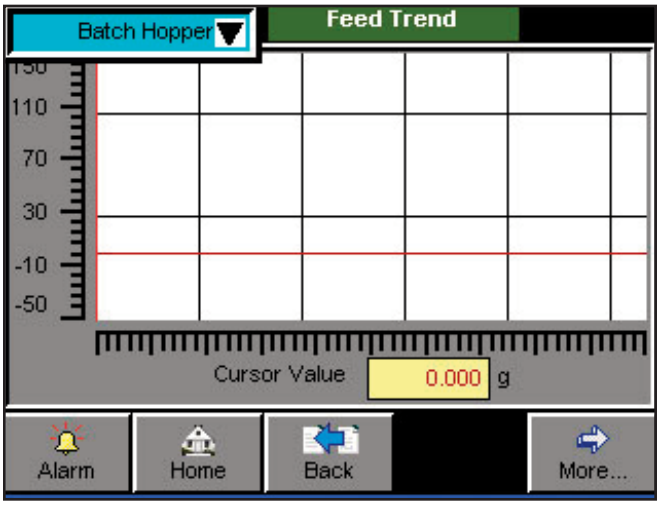
(Continued)

Menus-Trending (continued)



Trending Main



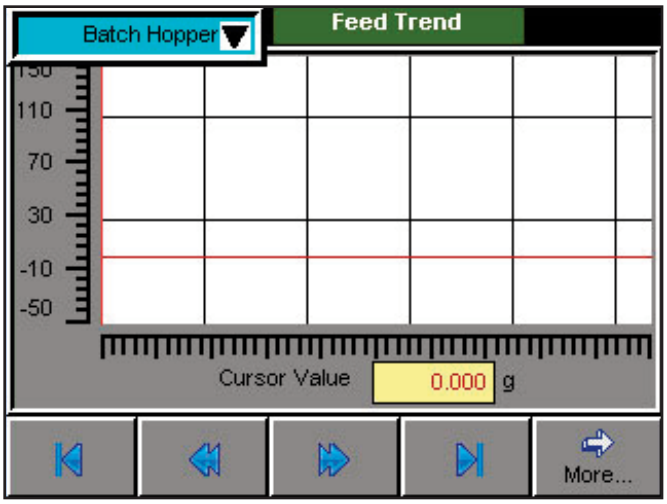
Trending, Feed Trend

The default Feed Trend device is the Batch Hopper weight. This can be changed to a component hopper, by touching the arrow down key to select a different device.

Touching the More button, brings up the cursor screen. With the cursor screen shown, the plot will not auto-update. This allows the user to move the cursor to a specific desired data point. Touching the chart a second time will exit the cursor screen. Use the horizontal command bar to move the cursor across the chart. The data points present at the cursor point will be displayed in the boxes along the right hand side of the screen. The boxes represent the data for extruders 1 to 12 from top to bottom.

(Continued)

Menus-Trending (continued)



Trending, Cursor Control

Menus-Diagnostics

Diagnostic - Batch Hopper

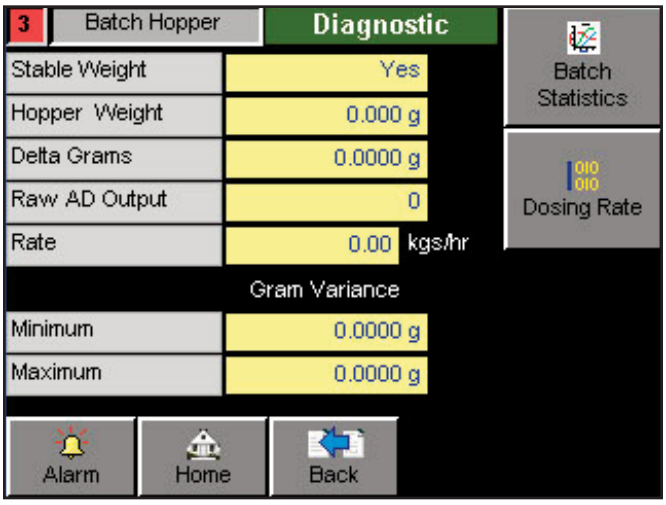
This page provides information regarding the stability of the batch hopper itself. The stable weight field indicates if the blender CPU has qualified the batch hopper weight stable enough to make batches. This field is YES when the batch hopper weight it stable. Delta Grams field indicates and variation (or vibration) that is occurring on the batch hopper. The raw AD Output value is a 7-digit number. This number is typically in to 2-3 million range with the batch hopper empty. It is in the4-6 million range when the batch hopper is full of material. At no time should this value be above 8 million: if it is , the loadcell is most likely defective or damaged. The Minimum and Maximum gram variance fileds indicate the total vibration range seen by the batch weigh hopper.

Batch Statistics displays the present batch accuracy and feed characteristics. Here the set/actual weights of each component are listed as well as their feed tolerances. The number of feeds for each component as well as the feed times are also listed. Pressing the SAVE button on this screen allows the user to output the last 50 Batch Statistics to a USB thumb drive, to later view on a PC using Excel.

Dosing rate indicates the current grams/second dosing rate capability of the individual components with material.

(Continued)

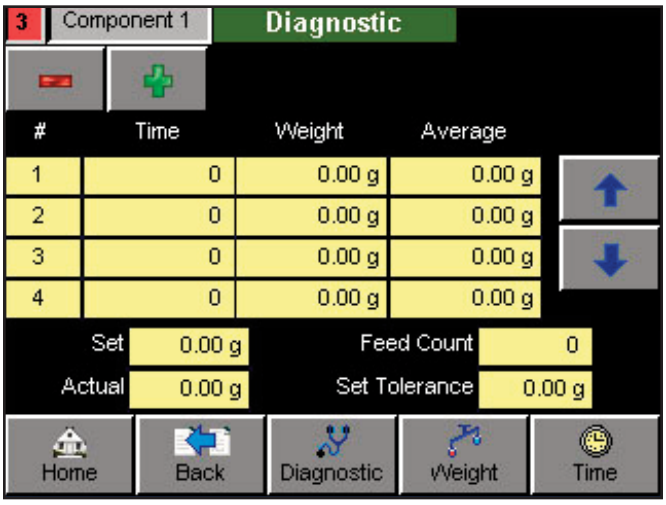
Menus-Diagnostics (continued)



Diagnostic, Batch Hopper

Diagnostic - Component

This page provides information regarding the feed of a component itself. The # column indicates dose number that occurred to dose the required component SET gram amount. The Time indicates the number of milliseconds the gate was opened, the Weight column indicates the amount of grams dosed for the given Time. The Average indicates the average gram amount dosed for the given Time value. Set indicates the set amount to feed. Actual indicates the actual amount dosed. Feed count indicates the number of dose feeds conducted to obtain the actual amount fed. The Set Tolerance value in grams, indicates the absolute minimum amount of material the gate is capable of dosing. Press the + or – button to view the next component.



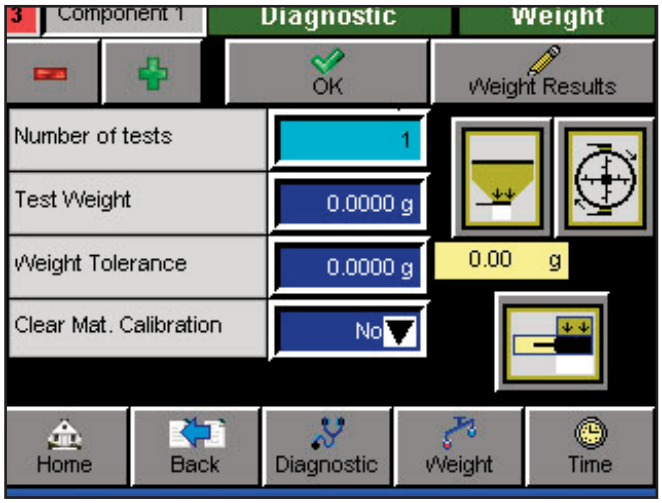
Diagnostic, Component

(Continued)

Menus-Diagnostics (continued)

The Diagnostic Component Weight screen allows the user to specify an exact amount of material to dose, as a test of the valve and weigh system. This is useful if a particular resin is required to dose a very low percentage, or is of an unusual geometry or size. The user can use this screen to determine the overall capability of a component valve and a material to dose.

The user can select the Number of dose tests, the test weight to dose, the weight tolerance or accuracy desired. The material calibration, or material feed characteristics, can be cleared before the dose test is begun here as well. Press OK to begin the dose test after setting the prior fields. Press the Weight Results screen to observe each dose test.



Diagnostic, Feed by Weight

Cycle 0 of 0
Weight Results
1) 0, 0.00 g, 0.00 g, 0.00 %
2) 0, 0.00 g, 0.00 g, 0.00 %
3) 0, 0.00 g, 0.00 g, 0.00 %
4) 0, 0.00 g, 0.00 g, 0.00 %
5) 0, 0.00 g, 0.00 g, 0.00 %
Minimum 0.0000 g
Range 0.0000 g
Maximum 0.0000 g
Std. Dev. 0.0000 g
Average 0.0000 g
Total Target 0.0000 g
Total Test 0.0000 g
Total Weight 0.0000 g
Close

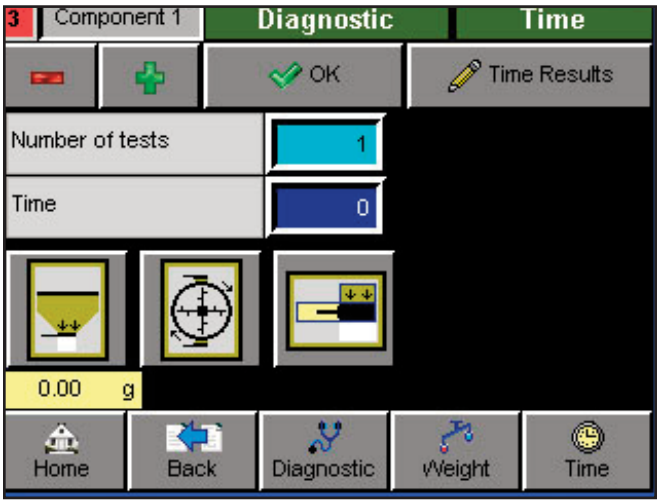
Diagnostic, Feed by Weight Results

(Continued)

Menus-Diagnostics (continued)

The Diagnostic Component Time screen allows the user to specify an exact Time for a material to dose, as a test of the valve and weigh system. This is useful if a particular resin is required to dose a very low percentage, or is of an unusual geometry or size. The user can use this screen to determine the overall capability of a component valve and a material to dose.

The user can select the Number of dose tests and the test Time to dose. Press OK to begin the dose test after setting the prior fields. Press the Time Results screen to observe each timed dose test.



Diagnostic, Feed by Time

Diagnostic, Feed by Time Results

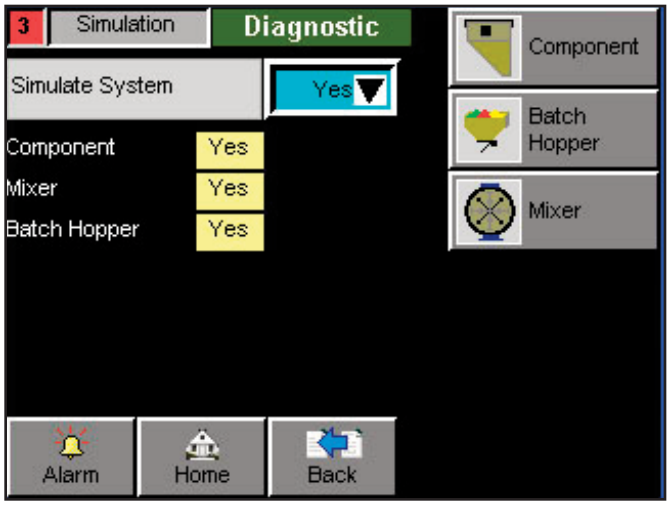
(Continued)

Menus-Diagnostics (continued)

Simulation
Simulation mode, makes it is possible to put the devices that comprise the system into a simulation state. This is useful for training purposes, if the user would like to simulate the operation of the blender, without running material though the blender.

Simulation – Navigate to a set of screens where the various devices in the system can be put into simulation mode.

From the main simulation page the entire system may be put into and out of simulation. To change just an individual device, place it in simulation from the device individual page. To adjust the simulation characteristics of a particular device, press the device button to go to the single device page.



Diagnostics Simulation, Main

Diagnostic - X20 PLC Slices
The X20 PLC slices are composed of essentially three pieces, a backplane socket, an I/O module, and a 12 position connector. The slice, or Slot, addresses and parts can be seen on the electrical print for the specific model blender. All three pieces plug into each other to provide a 'slice' (slot). Each slice is assigned a 'slot/slice' number. Slices are then connected to each other to form a rack. Slice numbers are assigned consecutively from a 'start' point. Some backplane modules have Hex encoded rotary dipswitches in them. These modules are used as 'start' points to begin the slot numbering scheme. Slot/slice numbers are Hex dipswitch settings are shown on the electrical enclosure drawing supplied with the system

Simulation – Navigate to a set of screens where the various devices in the system can be put into simulation mode.

(Continued)

Menus-Diagnostics (continued)

✎ **NOTE:** It is imperative the slices are placed in the order shown on the electrical drawings and are correctly set the Hex dipswitches. This ensures each slice is assigned a correct slice address as defined in the software located within the Master CPU. Modules will not function properly if out of order, or addressed improperly.

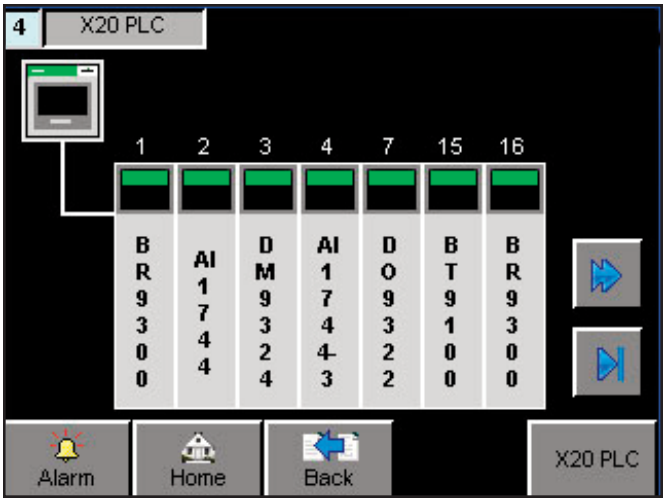
The entire system is powered by 24vdc.

The internal bus power connection is fused. The I/O power is rated for a maximum of 10 amps, however the supply is not. The fuse used for the I/O power is separate from the buss power. The touch screen (PP045) is fused with a 5 amp fast acting fuse.

The X2X network can be extended between remote racks. A transmitter module must be used with an associated receiver module. The connection can be as far as 100m.

Each backplane module has a shield connection to its base. This is a 0.110 x 0.19 spade terminal. Terminate any X2X network cable shield at one end of the cable run, and only at one end.

Within this set of screens, the user may view the state of the X20 slices. This is shown in the figure below. A green status bar at the top of each slice indicates a 'Good' condition. A red bar at the top of a slice indicates a 'Bad' condition. The user can touch the slice shown on the display, to view it in detail. After the slice is touched, the display will show the individual slice parameters. Use the '+/-' buttons to change the slice counter or manually enter the slice number directly. Slice numbers are shown on the electrical panel print supplied with the system.



Diagnostics

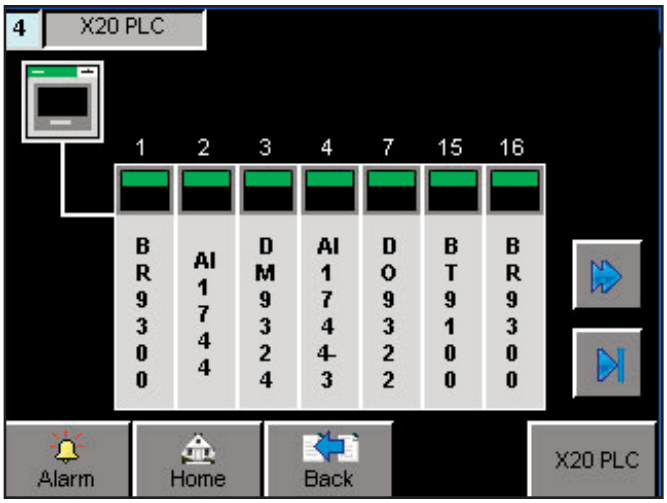
(Continued)

Menus-Diagnostics (continued)

Slice 0 is used to identify the data pertinent to the touch screen. Slice 1 is the first slice in the system. Note: Not all slices may be present. Additionally, there are gaps in the slice numbering system to account for future expansion of the system.
For each slice the main page indicates the following:

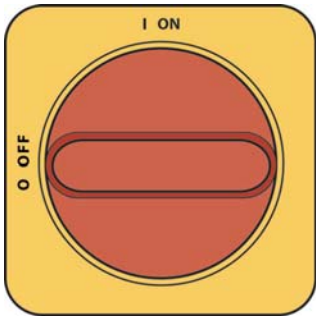
- Slice status to indicate if the slice at the specified location is operating correctly 'OK'. If the slice is 'Bad'/'Missing', the slice is not installed, the slice contains a major fault, or the slice type is not valid for the specified location. That is the slice is 'OK' and communicating, but the ID returned does not match the slice type defined for that slot location.
- The B&R part number.
- The B&R serial number of the slice.
- The version of the firmware installed in the slice.
- The hardware version of the slice.

For each slice there is an 'Advanced' page. This page displays the operational data of the slice. The data includes the status of the digital and analog inputs/outputs and any status information. Some fields in the advanced pages allow user entry if the correct security level is entered 'Private'. This is only for development purposes and therefore the password to access this level is not published.



Diagnostics

Shutting Off in Emergency



1 **Switch the main switch to off.** The power supply is interrupted. If the cone valve was open, it is closed. All other machine movement is stopped immediately. The batch is not finished. The main switch can also be locked manually with a lock.

Restarting after Emergency Stop

1 **Switch the main switch to on.** If switching on within two minutes of stop, the unit continues the interrupted process. This function is used to keep downtime in the event of a short power interruption as short as possible. The screen that was last open before switching off or power failure is opened. If switching on after more than two minutes, the internal functions are completely reset. The start screen will appear.

✎ **NOTE:** If the metering cycle was interrupted, the material in the weigh bin must be removed manually before restarting. See step 2 if necessary. This will prevent an incorrect mix ratio.

2 **Remove the weigh bin carefully** to prevent damage to the load cell and empty it. (Only necessary if the metering cycle was interrupted.)

Changing Material in a Blender Component

Detachable material hopper procedure

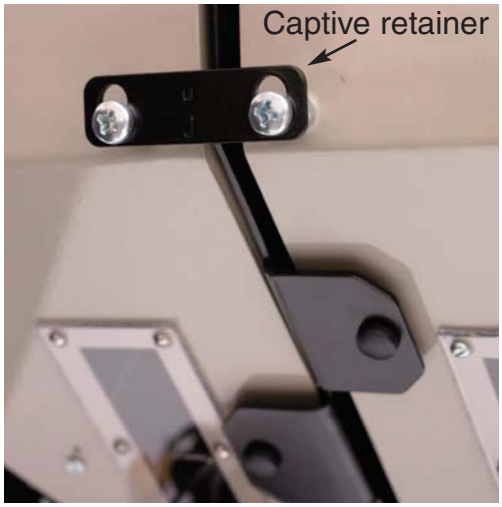
For models TB 45 (4 bins) and TB100 (2 bin models) and TB250R (2 bins).

All detachable material hoppers are held in place with a captive retainer (screw) attached to the hopper support frame. The retainer stabilizes the detachable hopper when mounted on the blender support frame from forces exerted on the hopper by resin weight and various types of automatic loading/receiving devices during normal vibration from the process. There is a separate retainer for each detachable hopper.

To remove any of these detachable hoppers for cleaning or material changeover:

1. **Remove the automatic loading/receiving device.**
2. **Use the proper hex head socket or screwdriver to loosen the captive retainer.**
3. **Carefully remove the hopper.**

To reinstall the hoppers, simply reverse the above steps. Once the hoppers have been placed and anchored, the loading/receiving devices can be mounted.



✎ **NOTE:** Upon reinstalling the detachable hopper, it is very important to re-anchor the respective hopper(s) using the captive retainer to provide stability during normal operation of the blender.

(Continued)

Changing Material in a Blender Component (continued)

Manual Cleaning

1 **Turn off the main power and use the disconnect on the power cabinet.**

2 **Disconnect compressed air.**

3 **Open the front access door and remove the weigh bin.**

4 **Position a deflector (cardboard tray) to divert material from collecting in the mix chamber to and outside drum or bucket.**

Tip: A Conair Drain Chute Accessory is available. This allows the discharge valves to be operated in manual mode.

5 **Using a "dowel rod" approximately 12 inches long, press vertically into the respective valve opening and raise the plunger cone to allow materials to flow from the material compartments.** Material will flow out of the hopper compartment through the valve opening onto the deflector and into the drum or bucket.

6 **Discharge the material completely and clean the material hopper from the top down.**

Tip: You may also want to clean the material receiver at this time while accessing the gravity dump valve through the respective blender clean out door.

7 **Reassemble blender.** If using the optional drain chute, be sure to engage the safety switch into the compartment receptacle.

Shown with the optional drain chute and safety interlock.

The optional drain chute is available from Conair.

Contact Conair Parts
1 800 458 1960
From outside of the United States, call:
814 437 6861

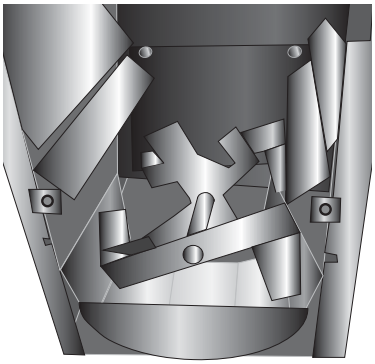
Cleaning the Mixer

CAUTION: Mix blade hazard

There are two hazards associated with the mix blades. First, the blades are driven with substantial torque. Never place your hand in the mix chamber unless power is completely disconnected and appropriate lock out/tag out procedures have been followed. Second, the mix blades may become razor sharp. Always be careful when touching or cleaning these blades. Check for sharp edges frequently. Replace blade if a hazard exists.

1 **Open the "quick-release" locks of the mixing chamber end cover and remove it.**

2 **Once the material compartment has been cleaned, remove the deflector.** This will enable you to clean the mixing chamber and the shut off valve at the bottom of the chamber. You may need to run the mixing agitator for a short time to fully evacuate the mixing chamber. If not necessary, skip to step 6.



3 **Close the mix chamber access door.**

4 **Restore power by closing the main disconnect switch.**

5 **Manually run the mixer for a short time to lower the material level.** *Refer to the Operation section entitled, Menus-Manual Control* to see how to run the mixer manually.

6 **If applicable, open the discharge slide gate at the bottom of the mix chamber.**

7 **Open the mix chamber access door.** The safety switch will prevent operation of the mixer with the door open.

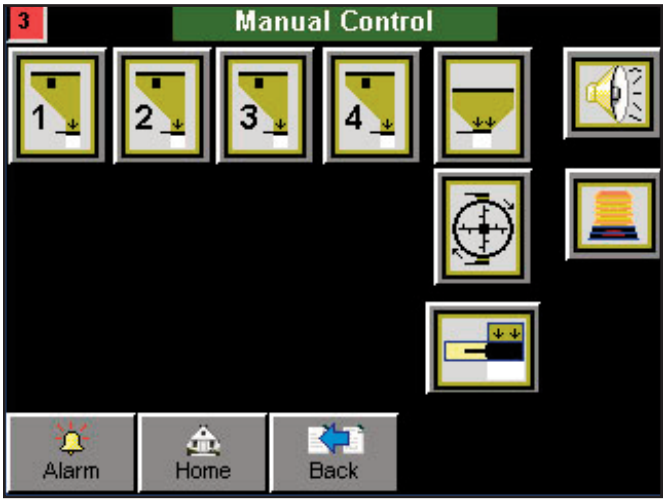
Tip: If using the optional drain chute with safety interlock, open the front access door, remove the weigh bin, and position the chute to direct material into a bucket or drum rather than the mix chamber.

(Continued)

Cleaning the Mixer (continued)

8 In the "Home" screen, press More/Setup/Maintenance/Manual Control.

9 **Press on the appropriate valve icon to open the selected valve gate.**



Removing material

The dispense valve unit is opened and the material runs out of the material hopper through the optional deflector to the collection receptacle.

1 **Discharge the material completely** and clean the material hopper from the top.

2 **Press on the appropriate material hopper icon again to close the dosing unit.**

3 **Remove the optional drain chute.** (If equipped.)

Now follow the steps outlined in the *Operation section entitled, Cleaning the Mixer* to access and clean the mix chamber and the bottom discharge valve.

SECTION
5

Maintenance

Preventative Maintenance Schedule 5-2

Preventative Maintenance Checklist 5-2

Loading Equipment 5-3

Software Upgrades. 5-3

Checking Emergency Stop Function 5-4

Changing Material in a Blender Component 5-4

Cleaning Mixing Chamber and Hopper 5-4

Draining the Water Separator 5-5

Inspecting Hoses 5-5

Removing and Installing the Mixing Chamber 5-6

Calibrating/Adjusting the Sensor 5-7

Replacing Pneumatic Cylinder on Vertical Dispense Valve 5-9

Load Cell Removal and Installation 5-10

Weigh Bin Mount Installation and Adjustment 5-11

Load Cell Removal 5-14

Load Cell Installation 5-15

Preventative Maintenance Schedule

The TrueBlend SB-2 system contains components that should be verified for proper operation every six months. The integrity of the TrueBlend SB-2 Batch hopper load cell, is important for reliable and accurate control of the system. *See the Operation section entitled, Menus-Hopper Setup, Calibration of Batch Hopper* for more information.

Preventative Maintenance Checklist

Routine maintenance will ensure optimum operation and performance of the Blender. We recommend the following maintenance schedule and tasks.

• Whenever you change materials

- ❒ **Check EMERGENCY STOP function**
- ❒ **Test the safety interlock switch**
- ❒ **Clean the extruder weigh hopper(s)**

• Monthly, or as often as needed

- ❒ **Inspect hoses for damage or wear**
  Damaged compressed air hose can allow moisture or contamination to seep into the system. Replace any hose that is torn or cracked.
- ❒ **Inspect the installation**
  Check installed mounting hardware to make sure that the installation is secure.
- ❒ **Inspect the compressed air system**
  Check the compressed air system for leaks. Compressed air leaks could compromise the performance of the TrueBlend SB-2 system.
- ❒ **Drain the water separator in the compressed air system.**

• Yearly, or as often as needed

- ❒ **Replace the TrueBlend SB-2 controller battery -** *See Troubleshooting, Replacing Controller Battery.*
- ❒ **Calibrate/adjust load cells on TrueBlend SB-2 hopper(s)**

Loading Equipment

The TrueBlend SB-2 component hoppers are generally loaded with a vacuum receiver. The proper operation of the loading receiver component is necessary for accurate control of the TrueBlend SB-2 component hopper.

Software Upgrades

Upgrading software on the TrueBlend SB-2 controller is accomplished by downloading the latest software version from Conair, burning the software onto a compact flash card, and installing the compact flash card into the TrueBlend SB-2 touch screen controller.

Alternatively, a pre-programmed Compact flash card can be ordered from the Conair service department.

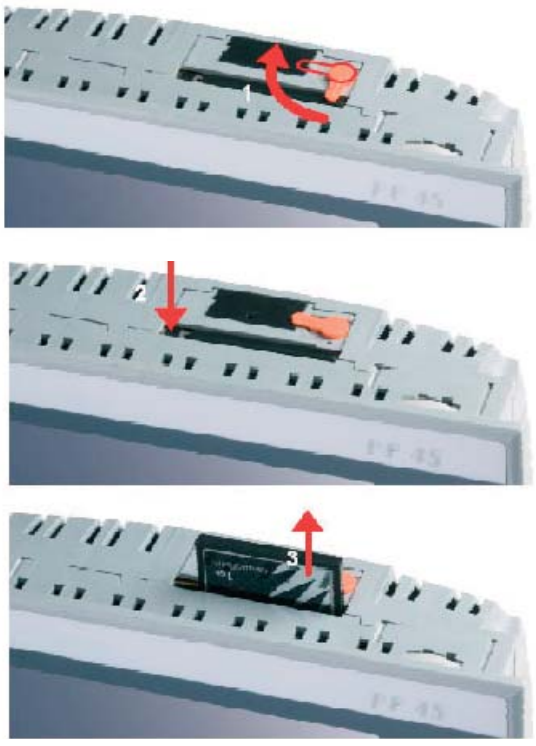
To download the most up to date TrueBlend SB-2 software version, contact Conair service.

To order a pre- programmed Compact flash card.

Contact Conair Parts
1 800 458 1960
From outside of the United States, call:
814 437 6861

Once the software is downloaded, it is burned onto the compact flash card using the flash card burner, available from the Conair Parts Department. Spare flash cards are also available.

Once the flash card is burned with the software, install it into the TrueBlend SB-2 touch screen. Turn the orange compact flash safety latch away from the compact flash (1). Then press the compact flash ejection lever with a screwdriver (2), until the compact flash is ejected. The compact flash card can now be removed by hand (3). Install in reverse order.



Checking Emergency Stop Function

See the Operation section entitled, Checking Emergency Stop Function.

Changing Material in a Blender Component

See the Operation section entitled, Changing Material in a Blender Component.

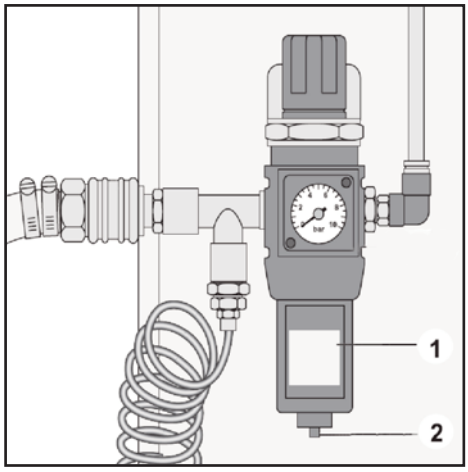
Cleaning Mixing Chamber and Hopper

See the Operation section entitled, Cleaning Mixing Chamber and Hopper.

Testing the Safety Interlock Function

Test the safety interlock function by opening the mixer chamber door. The alarm should sound and the blender should stop. Check the component hopper safety interlocks (if applicable) by opening each compartment door. The alarm should sound and the blender should stop.

Draining the Water Separator



1 **Loosen the knurled screw [2] on the bottom of the water separator [1]** and drain the water.

2 **Tighten the knurled screw.**

3 **Check that all screws, attachments, and connections are firmly attached.**

Inspecting Hoses

Loose or damaged hoses can allow moisture regain or material contamination. Compressed air leaks are also expensive and wasteful.

1 **Inspect all hoses, clamps, fittings.**

2 **Tighten any loose hose clamps or fittings.**

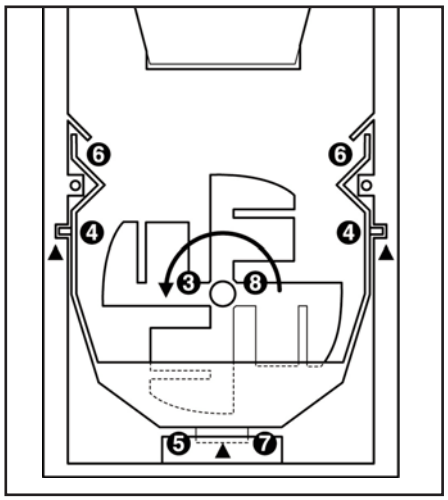
3 **Replace worn or damaged hoses.**

Removing and Installing the Mixing Chamber

1 **Turn all 1/4 turn-fasteners on the front panel counter-clockwise until they release.**

2 **Remove the front panel.** Some models require lifting the panel to clear 2 screws at the bottom.

3 **Remove the mixing agitator by pulling straight out.** You may need to rotate the shaft as you remove it in order to clear the front bin wall.



4 **Lift the front of the mixing chamber to align the locking pins with the release slots.**

5 **Pull the mixing chamber forward until release extension on the bottom of the chamber interfaces with the nylon drain port.** Place hands under chamber and lift fingers to raise the back of the bin over the drain port. Pull bin straight out.

6 **Align bin walls with guides and push straight inward until the extension on the bottom of the chamber interferes with the nylon drain port.**

7 **Place hands under chamber and lift fingers to raise the back of the bin over the drain port.** Push bin straight in making sure the back of chamber passes under the tab on the back wall of the chassis. Some models do not have this tab.

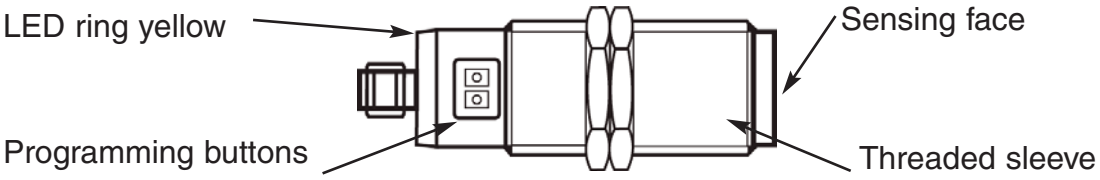
8 **Install mixing agitator by pushing straight in.** You may have to rotate the shaft as you install it in order to clear the front bin wall and align the agitator shaft with the keyed drive shaft.

9 **Align the 1/4 turn fasteners on the front plate with clips on chassis and install front plate.** Turn the 1/4 turn fasteners clockwise until they tighten. Some models require the alignment of the agitator shaft with a bearing installed on the front plate before the plate can be tightened.

Calibrating/Adjusting the Sensor

The level sensor switched when material passes in front of the active area. The level sensor adjustment depends on the type of material and must be adjusted accordingly.

Calibrating with no material present



1 **Make sure the Efector sensor is installed into the rear of the blender chassis so that it is flush with the inside of the rear of the mixing chamber.** It should be installed as close as possible to being flush and still allow access to push button and indicator light (should be facing away from mixing motor - towards the outside of the unit).

2 **Make sure the supplied nut is installed in the back of the sensor, tightened against the weld coupling on the back of the chassis.**

3 **Turn power on, and make sure that all mixing components are in place, and close the door.**

4 **Use a small screwdriver or pen to press the OUT OFF adjustment pushbutton until the yellow LED ring flashes at a rate of 1Hz.** This should take about 2 seconds. Release the OUT OFF button and the yellow LED ring will turn off. The sensor is now set for emptying mixing chamber and should need no further adjustment.
IMPORTANT - Do not adjust the OUT ON LED, this will switch the operation of the level sensor.

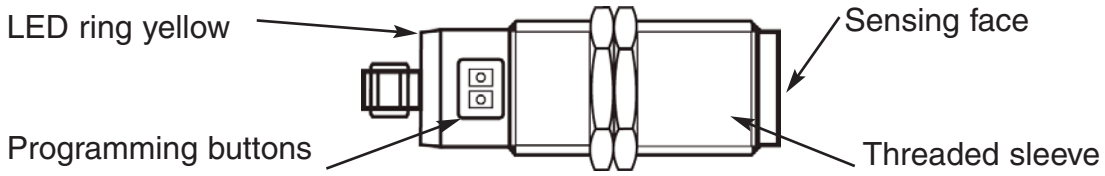
5 **Hold a finger over the front of the sensor and make sure that the yellow LED ring illuminates** to indicate that the sensor is functioning properly.

6 **Operate the mixer manually to ensure that the yellow LED ring does not light when mixer blade passes the face of the sensor.**

Tip: If this does occur, make sure the sensor is inserted flush with the rear plate of the mixing chamber. If the unit still sees the mixer while in operation, turn the mixer blade to the position where the sensor is sensing the blade and repeat step 4. This will adjust the sensitivity of the sensor so that the blade is invisible, but the material will still be sensed during operation.

Calibrating/Adjusting the Sensor (continued)

For most applications setting the sensor with no material in the vessel is sufficient. A large amount of fines or regrind or a low bulk density material may require calibrating or adjusting the sensor with material present in the bin. Making a full adjustment (material present) does not change the empty adjustment.



Calibrating with material present

1 **With material present, use a small screwdriver or pen and press the OUT OFF adjustment push button until the yellow LED ring flashes at a rate of 1Hz** - this should take about 2 seconds. Release the OUT OFF button and the yellow LED ring will turn off. The sensor is now set for the mixing chamber with material present. IMPORTANT - do not adjust the OUT ON LED, this will change the operation of the level sensor and it will no longer work for this application.

(Continued)

Replacing Pneumatic Cylinder on Vertical Dispense Valve Assembly

1 **Open the cover [3].**

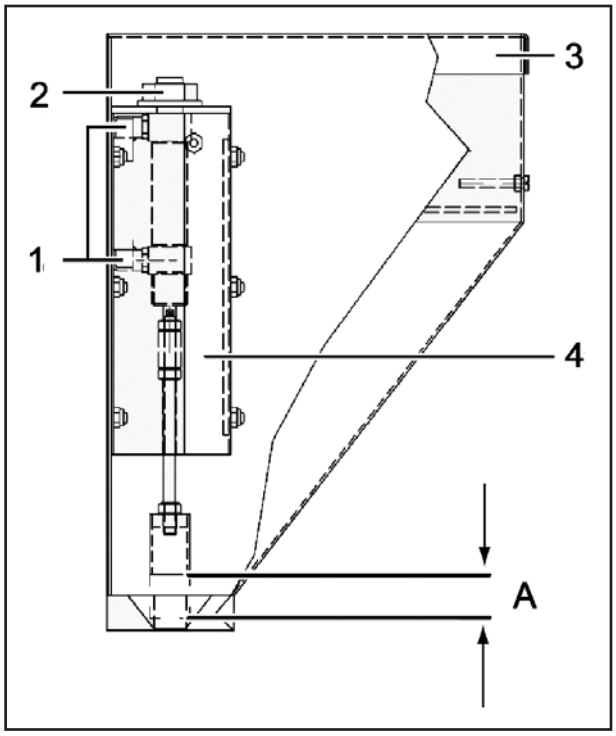
2 **Remove the cylinder cover [4].**

3 **Pull the hoses [1] from the cylinder.**

4 **Remove the nut [2].**

5 **Remove the complete unit.**

6 **Reassemble in reverse order.**
Note the stroke when installing, otherwise the desired throughput may not be reached.



✎ **NOTE:** When disassembling the cylinder/valve assembly, measure the length of the complete assembly (Dim A) and record. This assembly length must be maintained. When reassembling, adjust the length to this value. Loc-tite™ all fittings when reassembling.

(Continued)

Load Cell Removal and Installation
(Models TB045 & TB100)

WARNING: Electric Shock

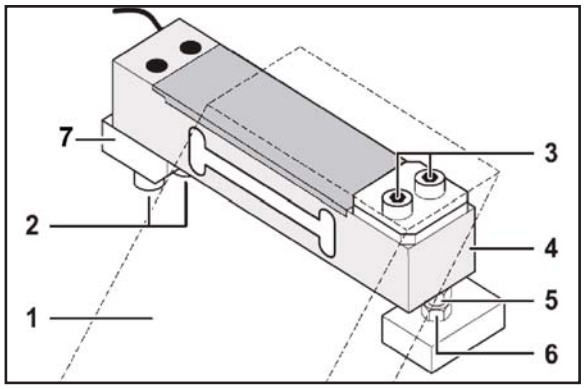
High voltages can cause life-threatening currents in the body and injury from electric shock. Allow only trained and qualified electrical technicians to work on the electrical system. Before any electrical work, disconnect the unit from the power supply and lock to prevent unauthorized persons switching it on.

Do NOT use excessive force. Forces that are exerted on the load cell from outside when attaching and removing the weigh bin load cell may damage the very sensitive load cell.

1 **Remove the weigh bin.**

2 **Disconnect the wiring that extends into the control box (see wiring diagram).**

3 **Remove the two screws [2] that are used to mount the load cell and weigh bin mounting bracket to the load cell mounting bracket [7].**



4 **Hold the load cell in a vise or similar and remove the two screws [3] from the load cell.**

5 **Mount the weigh bin mounting bracket [1] onto the new load cell using the two screws [3] and tighten to 10Nm.** Make sure that the weigh bin mounting bracket [1] is perpendicular and square with the load cell.

6 **Place a small amount of removable strength Loc-tite™ onto the two screws [2] and re-install the load cell and weigh bin mounting bracket back onto the load cell mount [7].** Make sure that the load cell [4] is mounted square with the load cell mount [7] and tighten the two screws [2] to a value of 10 Nm.

7 **Assemble in reverse order.**

✎ **NOTE:** Items number 5 and 6 are used as a stop for the load cell to prevent damage if over weighting occurs. If this bolt was not loosened during removal or installation, it should not need adjusted. If it was loosened, the gap needs to be reset so the load cell contacts the bolt when the weigh bin is loaded with 3kg total weight. A .040" feeler gage could be used to set the gap.

Load Cell Removal and Installation
(Models TB045 & TB100) (continued)

To complete the installation of the load cell, it is necessary after installation to pre-stress the load cells.

1 **Place a 3kg weight into the load cell for 10 seconds and then remove it.**

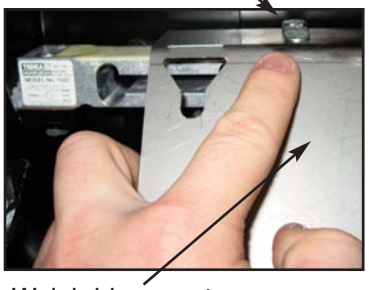
2 **Repeat this procedure three times.**

3 **Re-route and install the wiring from the load cell to the appropriate location in the control box.**

4 **Complete an empty and full calibration** (*see the Operation section entitled, Menus-Hopper Setup, Calibration*) **and operate as normal.**

NOTE: If the load cell is under tension or distorted by outside influences, this can usually be recognized by a fluttering screen. A display of +/- 20g or more instead of ca. 0 g (at zero calibration) is an indication that the load cell should be replaced.

Screws holding the weigh bin mount to the load cell.



Weigh bin mount

Weigh Bin Mount Installation and Adjustment (Models TB045 & TB100)

Follow these steps to install and adjust the weigh bin and/or the weigh bin mount on TrueBlend models TB45 and TB100. Use this procedure to fit a new weigh bin mount to an existing weigh bin or to adjust the clearance between the weigh bin and the weigh bin mount.

1 **Remove the weigh bin from blender and set aside.**

2 **While holding the load cell in place (to minimize twisting or bending of the load cell) remove the two screws that hold the weigh bin mount to the load cell.**

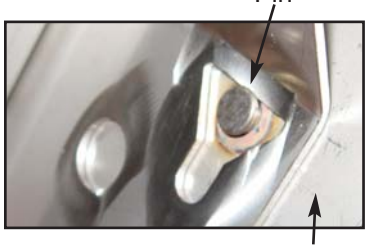
3 **Remove the weigh bin mount and discard (if installing a new weigh bin mount) or use the existing piece if simply adjusting weigh bin and/or weigh bin mount fit.** Locate the weigh bin and place the new or existing weigh bin mount on the back of the weigh bin. Slide the key hole slot on the weigh bin mount - the key hole slot should slide into the pins on the weigh bin.

4 **The weigh bin mount should slide on easily with no interference between the two pieces but should be tight enough so there is very little movement between the two parts.** The movement shown should be minimal - less than .010 of an inch.

5 **If the weigh bin mount will not slide on the weigh bin, the pins that are welded on the back of the weigh bin will need to be adjusted.** To do this, open the weigh bin and place the bin on a vice or similar. Once the bin is on a hard surface, lightly tap the backside of the pins with a ball head hammer to move the pin outward. Each pin should be tapped a few times, then repeat step 3.

6 **If the weigh bin slides on the pins, but excessive movement exists (greater than 0.010 inch as shown in step 4) they weigh bin pins will need to be tightened.** To tighten the pins, place the weigh bin on a hard surface and lightly tap the top of the pins. Each pin should be tapped a few times and then step 3 should be attempted again.

Pin



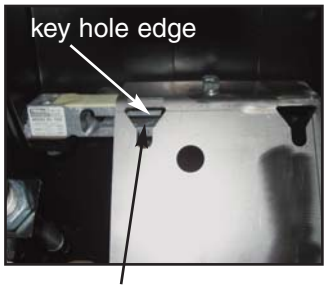
key hole slot on weigh bin

(Continued)

Weigh Bin Mount Installation and Adjustment (Models TB045 & TB100) (continued)

7 **Once the pieces are adjusted correctly, install the weigh bin mount onto the load cell.** Place removable strength Loc-tite™ on the two screws and lightly tighten. Once the mount is in place, adjust the bracket until it is perpendicular to the load cell. This can be accomplished by looking through the key hole slot in the weigh bin mount and comparing the edge of the load cell to the upper edge of the key hole slot - they should be parallel.

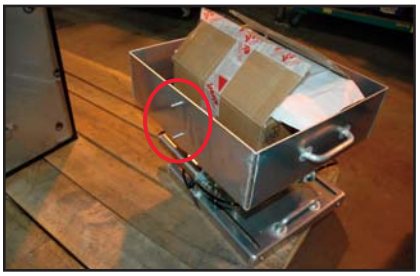
8 **After the items are placed correctly, fully tighten the two screws and torque to 10Nm (88 in-lbs).** Replace the weigh bin and calibrate/re-zero the load cell as described in the *Operation section entitled, Menus-Hopper Setup.*

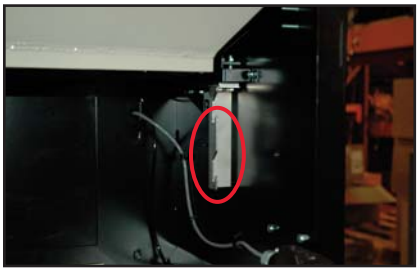


Weigh Bin Installation and Adjustment
(Models TB250, TB500, TB900)

The weigh bin needs to set freely in the bottom of the slots and the hoses are to be connected in the quick disconnects.

✎ **NOTE:** Weigh bin mount adjustment is not necessary or recommended for the TB250 and larger models.





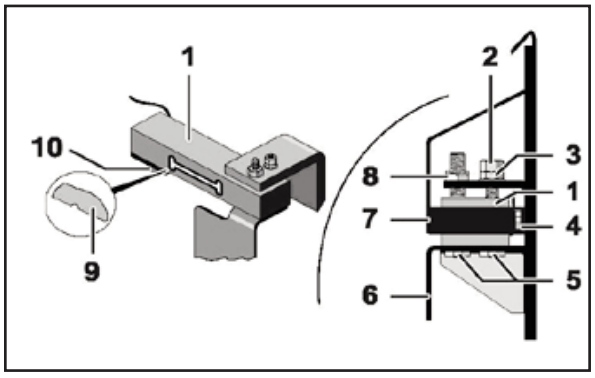
Load Cell Removal (Models TB250, TB500, TB900)

WARNING: Electric Shock

High voltages can cause life-threatening currents in the body and injury from electric shock. Allow only trained and qualified electrical technicians to work on the electrical system. Before any electrical work, disconnect the unit from the power supply and lock to prevent unauthorized persons switching it on.

Do NOT use excessive force. Forces that are exerted on the load cell from outside when attaching and removing the weigh bin load cell may damage the very sensitive load cell.

1. **Remove the weigh bin.**
2. **Disconnect the wiring that extends into the control box (see wiring diagram).**
3. **Look at the general location of all items to see how the items are installed before removing.**
4. **Remove the load cell cover plate [7] by loosening the load cell cover plate holding nuts [4] and sliding the cover upward off of the studs.**
5. **Unscrew the two hex nuts [2] and [3] and remove the two hex bolts [5] from the load cell.**
6. **Remove the weigh bin hanger [6].**
7. **Remove the two screws that mount the load cell to the load cell mounting bracket [11] and remove the old cell.**



Tip: There is no need to remove the stop screw [9] and lock nut [10] during removal of the load cell. It should remain in place so no adjustment is needed after installation.

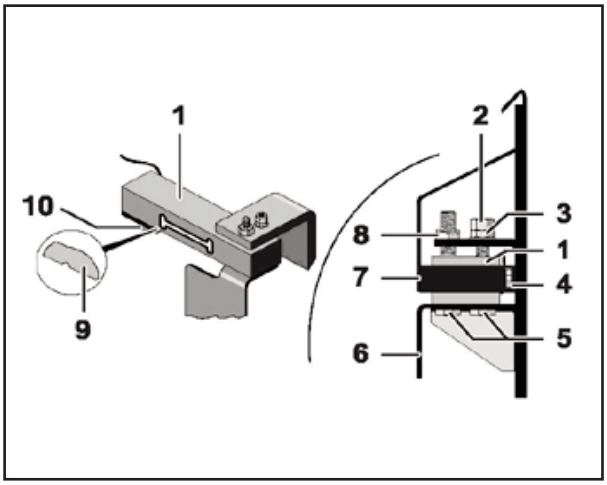
Load Cell Installation (Models TB250, TB500, TB900)

WARNING: Electric Shock

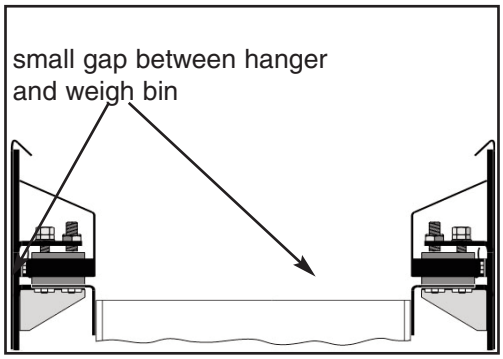
High voltages can cause life-threatening currents in the body and injury from electric shock. Allow only trained and qualified electrical technicians to work on the electrical system. Before any electrical work, disconnect the unit from the power supply and lock to prevent unauthorized persons switching it on.

Do NOT use excessive force. Forces that are exerted on the load cell from outside when attaching and removing the weigh bin load cell may damage the very sensitive load cell.

1 **Position the new load cell [1] (both load cells in the unit follow the same procedure) so that the notch on the load cell is facing downward.** Place a small amount of removable strength Loc-tite™ on the two screws [8] and re-attach the new load cell to the mounting bracket [11]. Make sure that the load cell is parallel with the chassis wall and the load cell mounting bracket. Tighten to 10Nm.



2 **Re-attach the weigh bin hanger [6] and install the two screws [5].** The longer of the two screws should be closest to the chassis wall. Only snug the screw at this time - further adjustment needs to be made before fully tightening them.



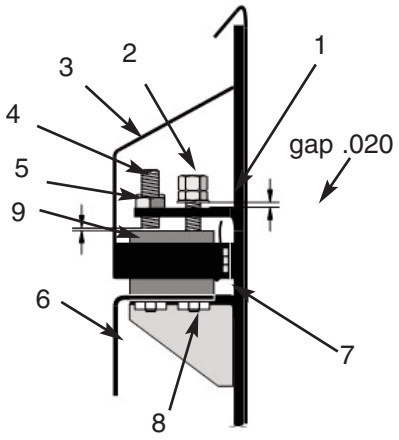
3 **Re-install the weigh bin into the blender chassis and position hanger [6] so weigh bin can be removed and installed easily.** The weigh bin should be installed so it is centered in the chassis and does not contact the weigh bin when the cylinder is at rest. Once satisfied with placement, tighten the two screws [5] to 10 Nm. Make sure that nothing is twisted after installation and tightening.

4 **Re-route and install the wiring from the load cell to the appropriate location in the control box.**

(Continued)

Load Cell Installation (Models TB250, TB500, TB900) (continued)

5 **If the stop bolt [4] and lock nut [5] were loosened during removal or installation, they will need to be reset.** The gap between the upper load cell stop bold and the load cell should be about .005" (use a feeler gauge for value) when the weigh bin is in place and at rest. Once set, tighten the lock nut.



6 **Screw nut [1] and lock nut [2] onto hanger mounting screw [8] but do not yet tighten.** The purpose of this bolt and nut is to prevent over-travel of the load cell to prevent damage to the cell.

7 **Use a feeler gauge and make the gap between the load cell stop bracket and the bottom of the nut .040".** Once the distance is set, tighten the two nuts. Alternatively, this can be set by either hanging a weight of 10 kg on each individual load cell hanger bracket, or reinstalling the weigh bin and loading it with a total weight of 20 kg. Once this weight is installed set the gap between the nut and the load cell stop bracket to zero distance then tighten the two nuts.

8 **To complete the installation of the load cell, it is necessary to pre-stress the load cells.** This can be preformed in two ways. Either by hanging a weight of 10 kg on each individual load cell hanger bracket, or reinstalling the weigh bin and placing a 20 kg weight into the bin. This weight should stay in place for 10 seconds, then be removed. Repeat this procedure three times.

9 **Complete an empty and full calibration** *(see the Operation section entitled, Menus-Hopper Setup, Calibration),* **then operate as normal.**

SECTION
6

Troubleshooting

Before Beginning 6-2

A Few Words of Caution 6-2

DIAGNOSTICS

How to Identify the Cause of a Problem 6-3

Signaling Alarm Message. 6-3

Handling Alarm Messages. 6-3

Alarms 6-4

REPAIR

Replacing Fuses 6-11

Replacing Controller Battery 6-12

Replacing Load Cells 6-13

Before Beginning

You can avoid most problems by following the recommended installation and maintenance procedures outlined in this User Guide. If you do have a problem, this section will help you determine what caused it and how to fix it.

Before you begin troubleshooting:

- Find the wiring diagrams and other schematics that were shipped with your equipment. These diagrams are the best reference for correcting a problem. The diagrams also will note any custom features, such as special wiring or control options, not covered in this user guide.
- Verify that you have all instructional materials related to the TrueBlend SB2, its control systems and its components.

  Additional details about troubleshooting and repairing specific components are in this manual.

- Verify that you have the user manuals for the equipment located upstream and downstream from the TrueBlend SB-2 system. Solving problems related to material conveyed to the TrueBlend SB-2 or due to poor extrusion or injection quality may require troubleshooting malfunctions or incorrect operating procedures on other pieces of equipment on the production line.

A Few Words of Caution

WARNING: This machine should be adjusted and serviced only by qualified technical personnel who are familiar with the construction and operation of this type of equipment.

DANGER: Voltage Hazard.
Always disconnect and lock out the main power supply before opening the TrueBlend SB-2 electrical enclosure. Troubleshooting procedures that require access to the electrical enclosure while the power is on should be performed only by qualified electrical technicians who know how to use electrical testing equipment and understand the hazards involved.

Improper corrective actions can lead to hazardous conditions and should never be attempted to sustain production.

How to Identify the Cause of a Problem

To find the cause of an alarm, go to the Main Menu ‘Home’ screen and press the ‘ALARMS’ key.

The cause of the alarm and the time that it occurred will be displayed on the screen. The user can navigate the alarm list using the ‘Up’ and ‘Down’ keys. The ‘ACK’ key when pressed, acts to acknowledge the alarm.

Signaling Alarm Message

- The alarm beacon flashes.
- The alarm message is displayed in the top right corner of the screen as a warning triangle.
- The alarm message is displayed as text when

is pressed in the navigation bar.

If a dosing unit does not reach the set weight, production does not continue. The metering attempt is repeated several times (number of attempts can be set). If the required value is not reached, the alarm beacon is activated.

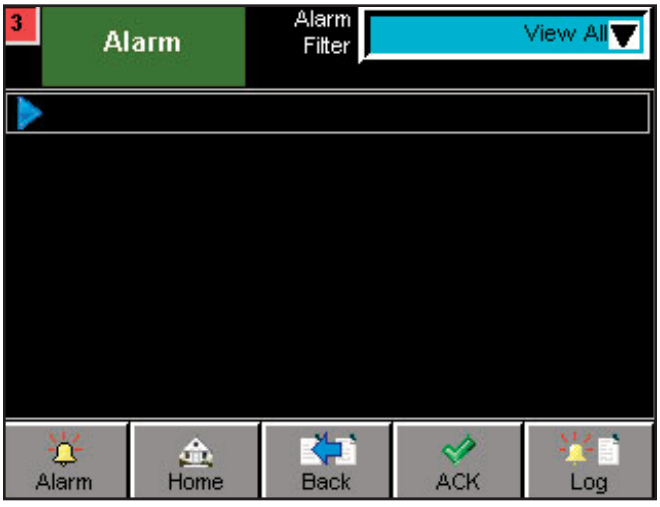
Handling Alarm Messages

1 Press

for an overview of all alarm messages.

2 Press

to clear alarms.



Alarms

The 'ALARM' key allows the operator to view, silence and acknowledge TrueBlend SB-2 system alarms. Possible alarms for the system include:

Blender Alarms
The blender alarm screen displays parameters used to generate alarms for the TrueBlend SB-2 Blender.

Understanding alarm codes:
In front of some alarm messages you may see these designators:
Component 1, Component 2, Etc. along with alarm text.
Component number stands for the component bin that is causing the alarm. It is important to look at the alarm text and check to see if there is a problem with the component bin number listed. For example, the alarm code "Component 2: Out Of Material." indicates that this problem is occurring because of bin number 2.

There are 3 basic types of alarm codes: Common alarms, material position specific alarms, and loader option alarms.

Alarm – displays alarm messages for Batch Hopper, Components, and Mixer.

The basic alarm messages are listed on the following pages.

(Continued)

Basic Alarms

Alarm Message:	Possible Cause	Solution
Batch Hopper is not dumping.	Batch weigh hopper exit gate is not opening and closing properly, and all the material is not allowed to exit. Mixer proximity switch is not operating, leaving no room for material to fully exit the batch weigh hopper. Mechanical interference with the batch weigh hopper, is preventing the weight of the hopper to detect as empty.	Ensure the batch hopper exit gate fully opens and closes properly. Test and adjust mixer proximity switch, so the material from the batch weigh hopper is allowed to drain fully into the mixer. Eliminate all mechanical interference with batch weigh hopper. In Setup/Component/Advanced, the Parameter 'Hopper empty weight tolerance' default value is set too low.
Batch Hopper cannot run in Gravimetric mode.	The batch hopper weight is unstable and cannot weigh properly. May be caused by mechanical interference of batch weigh hopper, or excessive machine vibration.	Eliminate mechanical interference or vibration first. Next, verify the empty weight displayed for the batch hopper is stable. Look at "Delta Grams" value under Setup/ Diagnostics/ Batch Hopper. This is the amount of weight variation the computer sees. Edit the setup value under Setup/Batch Hopper/ Advanced, called "Unstable Weight Tolerance". Increase this value slightly to make the alarm go away.
Hopper hardware failure.	The load cell or the load cell input PLC Slice is bad.	Calibrate the hopper. A zero value near 2,000,000 should also show up during the Zero part of the calibration. If a value greater than 8,388,608 is displayed during the weight part of the calibration, replace the load cell.
Mixer door is open.	Occurs when the mixer door interlock is broken, door is opened.	Close and 'make' the door interlock. Occurs in conjunction with Mixer Door Open, as this breaks the 24vdc interlock to the PLC Input Slice.
Component hopper out of material.	Occurs if the component hopper does not dose any material.	Check the component hopper to be sure material is present. Correct component hopper loading problem.

(Continued)

Basic Alarms (continued)

Alarm Message:	Possible Cause	Solution
Component hopper low on material.	Occurs ONLY with optional component hopper proximity switches. A component hopper proximity switch is not covered.	Check the component hopper to be sure material is present. Adjust proximity switch for proper operation. Correct component hopper loading problem.
Component out of specification.	Each component is programmed to dose very accurately. Alarm occurs if the dosed amount has an error greater than Setup/ Component/ Alarm "Out of specification" Setpoint.	This usually occurs if very LOW percentage doses are attempted. The valve for this low dosed component may be too large. Increase the Setup Alarm parameter called "Out of Specification" for that component. Setup/ Component/ Alarm. Consult the factory for additional assistance.
Gate valve failure.	Occurs if a component material dosing valve leaks material, when it is supposed to be closed.	Check each component material dosing valve to ensure it is not held open or leaking material.
Material feed error.	Occurs if a material dosing valve, suddenly doses material at a rate that is significantly different than a prior dose rate.	Check the component material dosing valve to ensure it indexes open and closed properly. Check the material within the component hopper for material bridging, or bridging from an obstruction. In the Recipe screen, reset the Material Calibration of the problem component, and monitor for recurrence.
Receivers material demand exceeds alarm time.	Only occurs if blender has Loading Option Hardware, and Loading Option Software is enabled. Alarm occurs if the receiver fill time exceeds the alarm time set in Loading/ Setup/ Loader/ Time "Alarm Time" Set point.	Check the component hopper to be sure material is present. Correct component hopper loading problem.
Component hopper out of material.	Only occurs if blender has Loading Option Hardware, and Loading Option Software is enabled. Alarm occurs if there are TWO blenders being loaded with ONE vacuum Pump AND the Ethernet communication link between the two blender touch screens has failed.	Repair the Ethernet Communication link between the two blender touch screens.

Basic Alarms (continued)

Alarm Message:	Possible Cause	Solution
X20 slice is bad.	Power or Communications has been lost to the PLC Slices in the blender electrical panel.	Occurs if +24vdc is removed, or X2X network communication is lost from touch screen. Also occurs in conjunction with Mixer Door Open, as this breaks the 24vdc interlock to the I/O PLC Slices.
Hopper gate valve failure.	Batch Weigh Hopper is not dumping material.	Display batch weight on Home Screen to be sure weight displayed is less than 0.15 lbs when empty of material. Calibrate Batch Hopper.
Calculated batch size is greater than capacity.	The batch size is automatically adjusted by the computer to produce the best blend ratio possible. If the new calculated batch size is greater than the setup parameter Setup/ Batch Hopper/"Oversize Batch", then this alarm occurs.	This usually occurs if very LOW percentage doses are attempted. The valve for this low dosed component may be too large. Consult the factory for assistance.

Loader Option Alarms

Alarm Message:	Possible Cause	Solution
Motor fault – If the there is a problem with the blower motor, this alarm will occur.	Motor protection of the fan motor has tripped.	Check motor, then switch motor protection on again.
	Wiring to motor protection is disconnected.	Check connection.
Filter fault – If the there is a problem with the blower filter, this alarm will occur.	Differential pressure switch in filter has tripped, as the filter became blocked.	Switch off conveying and clean the filter.
HLx: material demand – (x represents a loader number 1-7. Example, HL1 would indicate a problem with hopper loader #1.) The hopper loader has not sent a "full" message within a specified period.	Material may be empty.	Check material source.
	Sensor may be defective.	Check whether sensor is functioning properly.
Restart - If the computer needs to be restarted, this alarm will occur.	Computer needs to refresh or reboot.	Reboot control or turn main power off for 30 seconds.

Replacing Fuses

This procedure covers the factory-installed fuses inside the TrueBlend SB-2 electrical control panel. If you have installed an electrical disconnect or emergency stop switch, additional fuses and/or breakers may have been used elsewhere in the main power circuit.

Located inside the TrueBlend SB-2 electrical control panel are fuses for the AC line, FU1, and the power supply output side, FU2 and FU3.

To replace a blown fuse:

1. **Disconnect and lockout the main power.**

2. **Open the electrical enclosure door.** Turn the screws on the front panel counterclockwise to open.

3. **Replace the fuse.** The fuses are located inside the control cabinet and are labeled and identified on the subpanel and the electrical print.

4. **Close the electrical enclosure and restart the unit.**

Replacing Controller Battery

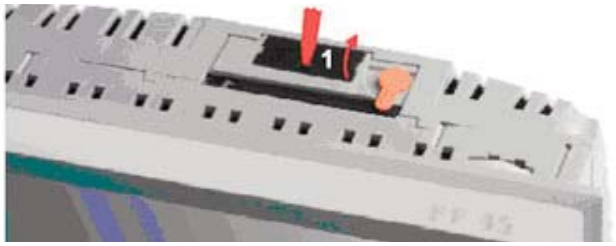
The TrueBlend SB-2 touch screen controller uses battery backed memory to store a variety of configuration, control and status data. If the battery drains to a low voltage, a system alarm will occur to inform the user. If the battery is drained and power to the system is removed, the data stored in battery backed memory will be lost. To avoid this, once the alarm is occurring, replace the battery with system power applied. The battery is Conair Part Number 2671080303.

This battery is replaced by removing the battery cover and pulling on the plastic tab to extract. Take care when inserting the battery that the plastic strip is around the battery so that it can be removed in the future.

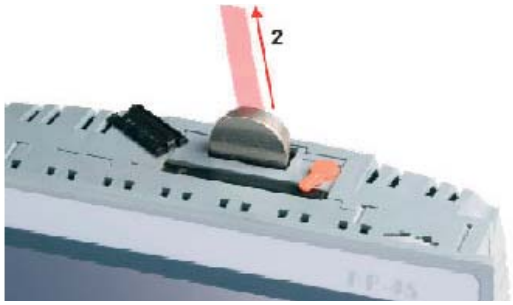
The controller battery is available from Conair.

Contact Conair Parts
1 800 458 1960
From outside of the United States, call:
814 437 6861

1 **Disconnect the power supply to the Power Panel.** Touch the housing or ground connection (not the power supply!) in order to discharge any electrostatic charge from your body.



2 **Remove the battery cover from the top of the Power Panel device using a screwdriver.**



3 **Pull the plastic tab to remove the battery.**

4 **Make sure the new battery is correctly aligned (see symbol on the battery socket) and the plastic strip is around the battery so it can be removed in the future.**

5 **Replace cover.**

Replacing Load Cells

1. **Remove the material from the TrueBlend SB-2 extruder hopper.**

2. **Disconnect the load cell wiring that extends into the control box (see wiring diagram).**

3. **Remove the two screws that are used to mount the TrueBlend SB-2 extruder hopper to the load cell.**

4. **Remove the TrueBlend SB-2 extruder hopper.**

5. **Remove the two screws that are used to mount the load cell to the hopper frame.**

6. **Place a small amount of removable strength Loc-tite™ onto the two screws and re-install the load cell and TrueBlend SB-2 extruder hopper back onto the hopper frame.** Make sure that the load cell and hopper are mounted square with the hopper opening exit and tighten the screws to a value of 10 Nm.

Do NOT use excessive force. Forces that are exerted on the load cell from outside when attaching and removing the TrueBlend SB-2 extruder hopper load cell may damage the very sensitive load cell.

✎ **NOTE:** A set screw positioned below the load cell is used as a stop for the load cell to prevent damage if over weighting occurs. If this bolt was not loosened during removal or installation, it should not need adjusted. If it was loosened, the gap needs to be reset so the load cell contacts the bolt when the weigh bin is loaded full with material. A .020" feeler gage could be used to set the gap.

⚠ WARNING: Electric Shock

High voltages can cause life-threatening currents in the body and injury from electric shock. Allow only trained and qualified electrical technicians to work on the electrical system. Before any electrical work, disconnect the unit from the power supply and lock-out to prevent unauthorized persons switching it on.

We're Here to Help

Conair has made the largest investment in customer support in the plastics industry. Our service experts are available to help with any problem you might have installing and operating your equipment. Your Conair sales representative also can help analyze the nature of your problem, assuring that it did not result from misapplication or improper use.

Additional manuals and prints for your Conair equipment may be ordered through the Customer Service or Parts Department for a nominal fee. Most manuals can be downloaded free of charge from the product section of the Conair website. www.conairgroup.com

How to Contact Customer Service

To contact Customer Service personnel, call:

✎ **NOTE:** Normal operating hours are 8:00 am - 5:00 pm. After hours emergency service is available at the same phone number.

From outside the United States, call: 814-437-6861

You can commission Conair service personnel to provide on-site service by contacting the Customer Service Department. Standard rates include an on-site hourly rate, with a one-day minimum plus expenses.

Before You Call...

If you do have a problem, please complete the following checklist before calling Conair:

- ❒ Make sure you have all model, control type from the serial tag, and parts list numbers for your particular equipment. Service personnel will need this information to assist you.
- ❒ Make sure power is supplied to the equipment.
- ❒ Make sure that all connectors and wires within and between control systems and related components have been installed correctly.
- ❒ Check the troubleshooting guide of this manual for a solution.
- ❒ Thoroughly examine the instruction manual(s) for associated equipment, especially controls. Each manual may have its own troubleshooting guide to help you.
- ❒ Check that the equipment has been operated as described in this manual.
- ❒ Check accompanying schematic drawings for information on special considerations.

Equipment Guarantee

Conair guarantees the machinery and equipment on this order, for a period as defined in the quotation from date of shipment, against defects in material and workmanship under the normal use and service for which it was recommended (except for parts that are typically replaced after normal usage, such as filters, liner plates, etc.). Conair's guarantee is limited to replacing, at our option, the part or parts determined by us to be defective after examination. The customer assumes the cost of transportation of the part or parts to and from the factory.

Performance Warranty

Conair warrants that this equipment will perform at or above the ratings stated in specific quotations covering the equipment or as detailed in engineering specifications, provided the equipment is applied, installed, operated and maintained in the recommended manner as outlined in our quotation or specifications.

Should performance not meet warranted levels, Conair at its discretion will exercise one of the following options:

- Inspect the equipment and perform alterations or adjustments to satisfy performance claims. (Charges for such inspections and corrections will be waived unless failure to meet warranty is due to misapplication, improper installation, poor maintenance practices or improper operation.)
- Replace the original equipment with other Conair equipment that will meet original performance claims at no extra cost to the customer.
- Refund the invoiced cost to the customer. Credit is subject to prior notice by the customer at which time a Return Goods Authorization Number (RGA) will be issued by Conair's Service Department. Returned equipment must be well crated and in proper operating condition, including all parts. Returns must be prepaid.

Purchaser must notify Conair in writing of any claim and provide a customer receipt and other evidence that a claim is being made.

Warranty Limitations

Except for the Equipment Guarantee and Performance Warranty stated above, Conair disclaims all other warranties with respect to the equipment, express or implied, arising by operation of law, course of dealing, usage of trade or otherwise, including but not limited to the implied warranties of merchantability and fitness for a particular purpose.

Retrofit Control Blender Start Up Procedures

When the TrueBlend Controller is used in retrofit replacement applications, follow the initial setup procedure below to ensure your blender will run at its optimum accuracy. This procedure sets the default dosing rates and settling times. This set up will help the blender control "home in" on the actual dosing rate quicker.

1 **Determine the valve configuration for the particular blender.** This can be done simply by measuring the operating mechanisms and noting the type of mechanism.

Example: Blender XYZ

Component 1 -3"x6" valve
Component 2 - 3"x6" valve
Component 3 - 2"x3" valve
Component 4 - 2"x3" valve
Component 5 - 2" i.d. feeder
Component 6 - 1" i.d. feeder

2 **Select the proper dosing rates for the different valve configurations from the following table.**

Example: Blender XYZ

Component 1 – 3" X 6" valve – 4000 g/s
Component 2 – 3" X 6" valve – 4000 g/s
Component 3 – 2" X 3" valve – 850 g/s
Component 4 – 2" X 3" valve – 850 g/s
Component 5 – 2" i.d. feeder – 40 g/s
Component 6 – 1" i.d. feeder – 8 g/s

3 **Enter the default flow rates into the blender control on the dosing rate screen.**

4 **Select the proper default settling times for the different valve configurations from the following table:**

Example: Blender XYZ

Component 1 – 3" X 6" valve – 1.5 s
Component 2 – 3" X 6" valve – 1.5 s
Component 3 – 2" X 3" valve – 1.5s
Component 4 – 2" X 3" valve – 1.5 s
Component 5 – 2" i.d. feeder – 5 s
Component 6 – 1" i.d. feeder – 10 s

5 **Enter the default settling times into the blender control on the settling times screen.**

6 **Run a material calibration for each of the components.**

7 **Run the blender, making sure that all materials are present in sufficient quantities for correct operation.** While running, the blender control will automatically adjust the dosing rate for optimum operation.

Blow Off Installation Instruction Sheet

The blow off kit is available from Conair. (Part # 61126101)

Contact Conair Parts
1 800 458 1960
From outside of the United States, call:
814 437 6861

1 **Mark your location of hole that will need to be drilled and tapped** (see the illustration on the next page for your particular blender size).

2 **Remove the level sensor (noting location of adjustment and sensor face), mixing chamber front plate, mixing chamber, mixer, and any wiring that is in the way of drilling the hole.**

3 **Drill a pilot hole at indicated location.**

4 **Drill 11/32" hole (de-burr hole) and tap 1/8" NPT.** Do not run tap fully through the chassis. Clean all shavings and fines from the chassis.

5 **Install item 8 into tapped hole and tighten.**

6 **Slide item 1 into item 8 through the mixing chamber** (this may be necessary because of welded end). Do not tighten yet.

7 **Install item 7 onto end of item 1 and tighten.**

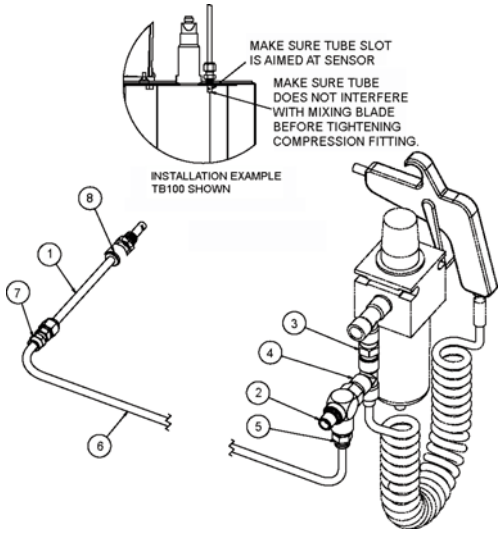
8 **Remove air inlet to regulator and install item 2,3,4, and 5 and tighten.** (Use thread tape where needed.) If the compressed air quality is poor and has contaminants in it the fitting should be installed on the outlet side of the regulator. The illustration shows recommended placement of the items, but they can be installed as necessary.

9 **Route item 6 between item 5 and 7 and insert.**

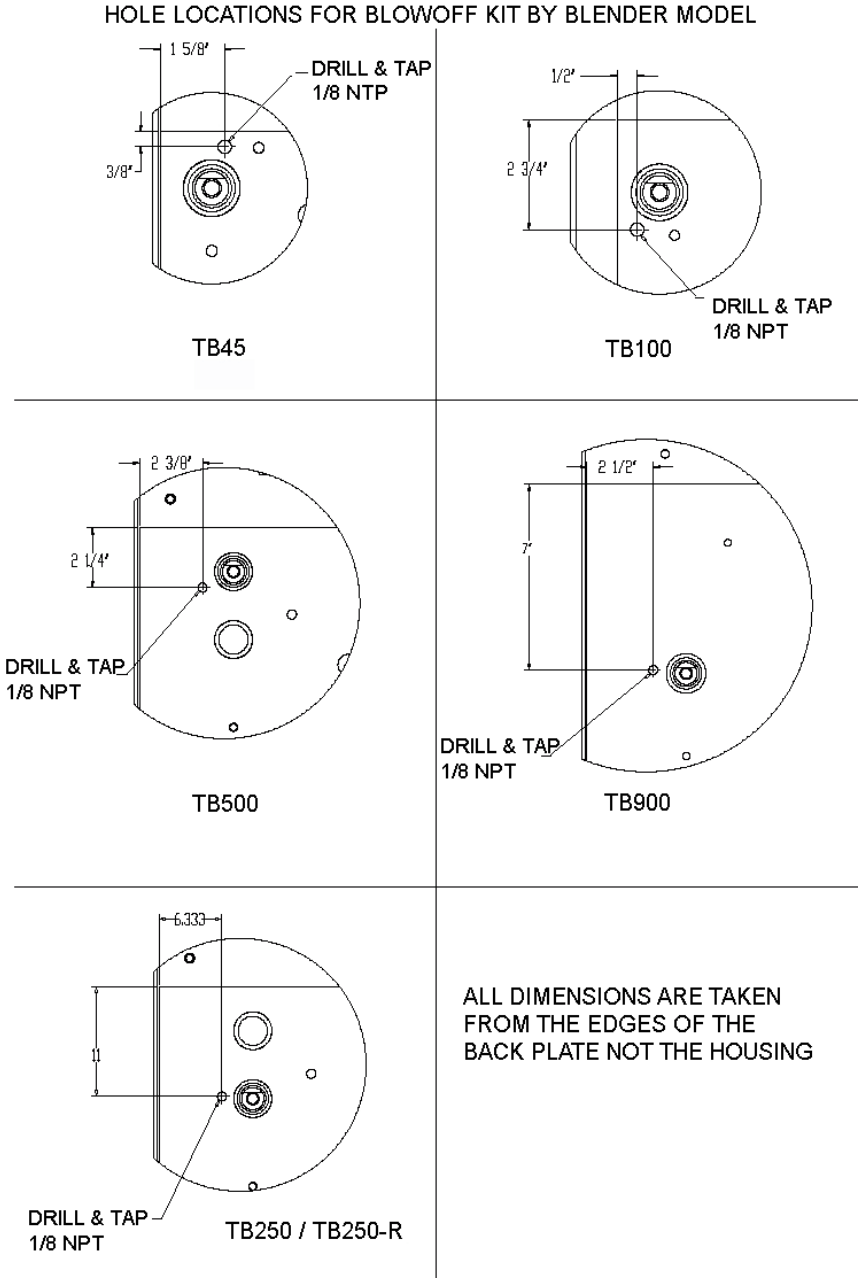
10 **Re-install sensor and wiring.**

11 **Make any adjustments necessary.** Adjust flow through item 2 so a small amount of air is bleeding from the opening in item 1. Adjust the insertion level and direction of item 1 so the air is blowing across the face of the sensor. Insertion depth into the chamber should be minimal as possible so tube does not contact mixer blade - tighten item 8 on item 1.

✎ **NOTE:** The air should be adjusted so fines are cleaned away from the sensor but the airflow should not blow material completely away, which may cause a false empty situation.

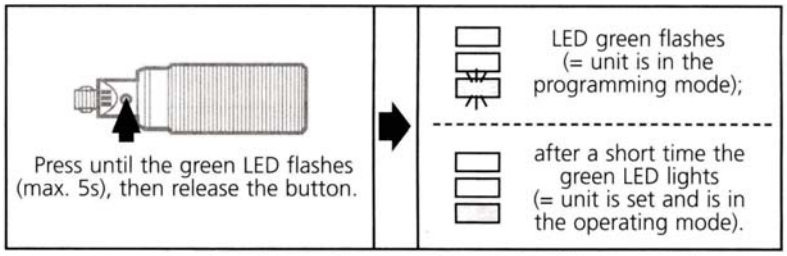


Hole Locations for Blow-Off Kit



Calibrating/Adjusting Level Sensor (Pre September 2007)

This style material sensor used prior to September 2007. The level sensor switches when material passes in front of the active area. The level sensor adjustment depends on the type of material and must be adjusted accordingly. These instructions are for calibrating a sensor with no material present.


Press until the green LED flashes (max. 5s), then release the button.
LED green flashes (= unit is in the programming mode);
after a short time the green LED lights (= unit is set and is in the operating mode).

✎ **NOTE:** Do not hold the button longer than 5 seconds. Holding 10 seconds locks the sensor.

1 **Use a small screwdriver or pen and press the adjustment push button until the green LED flashes at one Hz or one flash per second.** (a maximum of 5 seconds.)

2 **Release the button as soon as the flashing starts,** and after a short time, the green LED lights solid. This means the unit is set and is in operating mode. Unit is set and should need no further adjustment.

3 **Once the unit is installed, hold a finger over the sensing part of the sensor and make sure that the LED changes state from green to red -** this indicates that the unit is working properly.

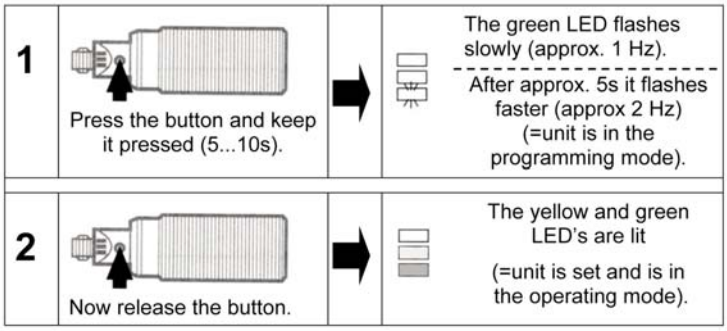
4 **To make sure that the unit is adjusted correctly and not too sensitive, close the door and manually run the mixer.** The LED should not change states while the mixer is running, which would indicate that the sensor is seeing the mixer pass the face.

Tip: If this does occur, make sure the sensor is inserted flush with the rear plate of the mixing chamber. If the unit still sees the mixer while in operation, turn the mixer blade to the position where the sensor is sensing the blade and repeat step 1. This will adjust the sensitivity of the sensor so that the blade is invisible, but the material will still be sensed during operation.

Calibrating/Adjusting Level Sensor (Pre September 2007)

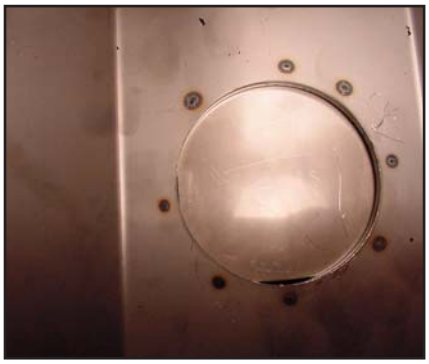
This style material sensor used prior to September 2007. The level sensor switches when material passes in front of the active area. The level sensor adjustment depends on the type of material and must be adjusted accordingly. These instructions are for calibrating a sensor with material present.

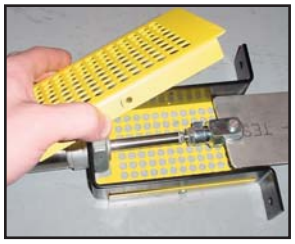
For most applications setting the sensor with the vessel empty is sufficient. You can, if you wish, make additional adjustments with material present in the bin. Making a full adjustment (material present) does not change the empty adjustment. This type of adjustment may need to be completed for low bulk density materials.

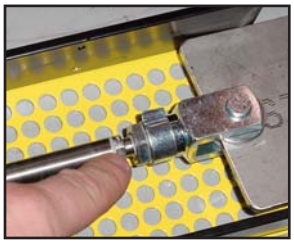

1
Press the button and keep it pressed (5...10s).
The green LED flashes slowly (approx. 1 Hz).
After approx. 5s it flashes faster (approx 2 Hz) (=unit is in the programming mode).
2
Now release the button.
The yellow and green LED's are lit
(=unit is set and is in the operating mode).

With material present, press and hold the pushbutton adjustment with a pen or a small screwdriver for more than 5 seconds, but less than 10 seconds. For the first 5 seconds the green LED will flash slowly (approx. 1 Hz or 1 flash per second) after approx 5 seconds then it will begin to flash faster (approx. 2 Hz or 2 flashes per second). Release the pushbutton as soon as the green LED begins to flash faster (approx. 2 Hz – or 2 flashes per second.

Installing Automatic Flow Control Valve (Option)







1 **Disconnect and lockout the main power supply, and the air supply from the blender.**

2 **Remove existing manual FCV from the rear of the blender.**

3 **Install the automatic version in its place using the original hardware or the new supplied hardware.** Use removable strength Loctite when installing hardware to make sure that the bolts do not work loose.

4 **Open the blender door and remove the front plate and mixer from the unit.** Manually push the slide gate back and then bring it forward to determine where the front of the slide gate ends relative to the opening in the bottom of the mixing chamber. It should just seal off the hole in the mixing chamber – there should not be a hole large enough where the material can leak by and it is important that the slide gate does not run past the mixer opening or material binding could occur. If this is not correct continue to step 5. (Note the FCV is adjusted at the factory and should be adjusted correctly for most blenders). If set correctly continue to step 6.

5 **Remove the slide gate from the blender, remove the cover from the FCV** and loosen lock nuts that adjust the length of the assembly as required from step 4. Re-install assembly and re-check mixing chamber closing. Once the length is correct, place a small amount of Loctite on the locknuts and re-assemble the FCV on the chassis.

6 **Open the control box enclosure door and route supplied tubing through the holes on the right side of the box.**

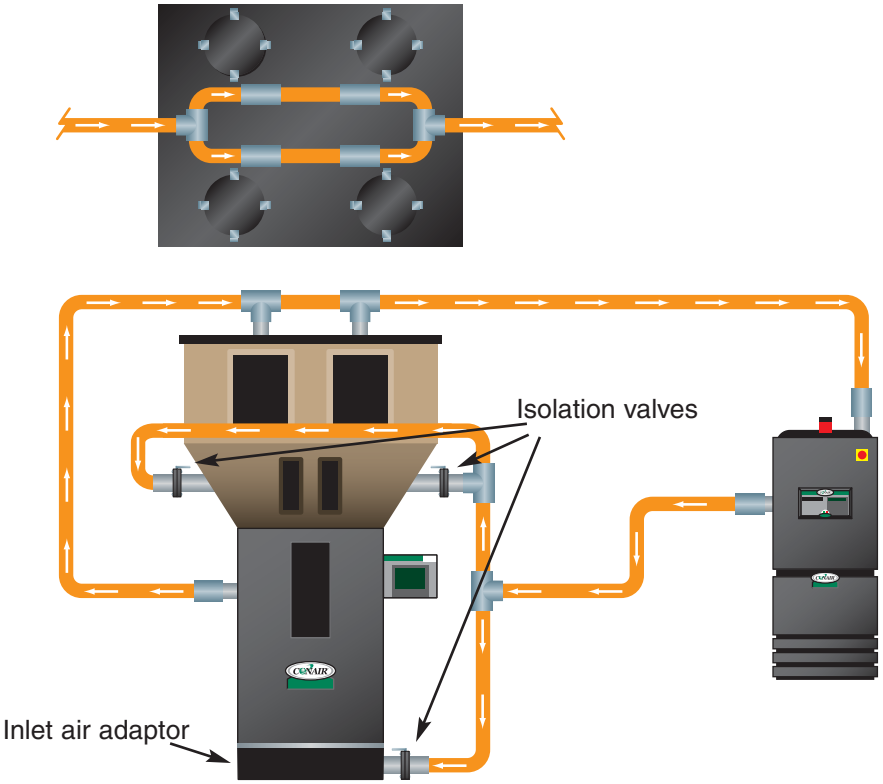
7 **Remove the existing plugs from the last solenoid on the stack.** Connect the hose that goes to the rear of the cylinder to the bottom of the valve stack and connect the hose (4) that goes to the front of the cylinder to the top of the valve stack. Make sure that the hose is fully seated into the fitting.

8 **Close control box door and re-connect the air and power to the unit. Make sure no leaks are present.**

9 **Place the blender manual mode and operate the FCV.** Make certain that the valve is operating the way the manual indicates (if indicates open valve is open and if indicates closed the valve is closed). If not correct switch hoses inside the control box.

10 **The valve should retract at full speed and extend fully in about one second.** If this is not set correctly loosen the locking nut (12) on the throttling valve on the front of the cylinder and adjust as necessary. Once this is adjusted correctly re-tighten the locking nut to make sure that this speed does not change.

Installing Dry Air Blanket (Option)



1. **Disconnect and lockout the main power supply, and the air supply from the blender.**

2. **Bolt the inlet air adaptor to the bottom of the blender.**

3. **Organize the piping from the dryer to the blender.**

4. **Loosely make all connections between the blender and the dryer, making sure to install the slide gates where necessary.**

5. **Tighten all connections.**

6. **Follow instructions in the blender user guide, and the dryer user guide for testing the installation. Run the dryer and check for leaks.**